RAW SEQUENCE LISTING
ERROR REPORT

The Biotechnology Systems Branch of the Scientific and Technical Information Center (STIC) detected errors when processing the following computer readable form:

Application Serial Number: 10/656,394

Source: CRF

Date Processed by STIC: 9-22-03

THE ATTACHED PRINTOUT EXPLAINS DETECTED ERRORS.
PLEASE FORWARD THIS INFORMATION TO THE APPLICANT BY EITHER:
1) INCLUDING A COPY OF THIS PRINTOUT IN YOUR NEXT COMMUNICATION TO THE APPLICANT, WITH A NOTICE TO COMPLY or,
2) TELEPHONING APPLICANT AND FAXING A COPY OF THIS PRINTOUT, WITH A NOTICE TO COMPLY
FOR CRF SUBMISSION AND PATENTIN SOFTWARE QUESTIONS, PLEASE CONTACT MARK SPENCER, 703-308-4212.

TO REDUCE ERRORED SEQUENCE LISTINGS, PLEASE USE THE CHECKER VERSION 4.0 PROGRAM, ACCESSIBLE THROUGH THE U.S. PATENT AND TRADEMARK OFFICE WEBSITE. SEE BELOW FOR ADDRESS:
        http://www.uspto.gov/web/offices/pac/checker

Applicants submitting genetic sequence information electronically on diskette or CD-Rom should be aware that there is a possibility that the disk/CD-Rom may have been affected by treatment given to all incoming mail.
Please consider using alternate methods of submission for the disk/CD-Rom or replacement disk/CD-Rom.
Any reply including a sequence listing in electronic form should NOT be sent to the 20231 zip code address for the United States Patent and Trademark Office, and instead should be sent via the following to the indicated addresses:

1. EFS-Bio (<http://www.uspto.gov/ebc/efs/downloads/documents.htm> , EFS Submission User Manual - ePAVE)
2. U.S. Postal Service: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450
3. Hand Carry directly to:
   U.S. Patent and Trademark Office, Technology Center 1600, Reception Area, 7th Floor, Examiner Name, Sequence Information, Crystal Mall One, 1911 South Clark Street, Arlington, VA 22202
        Or
   U.S. Patent and Trademark Office, Box Sequence, Customer Window, Lobby, Room 1B03, Crystal Plaza Two, 2011 South Clark Place, Arlington, VA 22202
4. Federal Express, United Parcel Service, or other delivery service to: U.S. Patent and Trademark Office, Box Sequence, Room 1B03-Mailroom, Crystal Plaza Two, 2011 South Clark Place, Arlington, VA 22202

Revised 04/24/2003

OIPE

Input Set : **A:\pto.pg.TXT**
Output Set: **N:\CRF4\09222003\J656394.raw** ·

```
       4 <110> APPLICANT: Wang
       6 <120> TITLE OF INVENTION: Cloning and Characterization of the
       7        Broad-Spectrum Resistance Gene Pi2
      10 <130> FILE REFERENCE: 035718/268948
C-->  12 <140> CURRENT APPLICATION NUMBER: US/10/656,394
C-->  12 <141> CURRENT FILING DATE: 2003-09-05
      12 <150> PRIOR APPLICATION NUMBER: 60/455,713
      13 <151> PRIOR FILING DATE: 2003-03-18
      15 <150> PRIOR APPLICATION NUMBER: 60/409,216
      16 <151> PRIOR FILING DATE: 2002-09-09
      18 <160> NUMBER OF SEQ ID NOS: 15
      20 <170> SOFTWARE: FastSEQ for Windows Version 4.0
```

Does Not Comply
Corrected Diskette Needed

P. 16 - 19

ERRORED SEQUENCES

```
    2004 <210> SEQ ID NO: 13
    2005 <211> LENGTH: 99090
    2006 <212> TYPE: DNA
    2007 <213> ORGANISM: Oryza minuta
    2009 <220> FEATURE:
    2010 <221> NAME/KEY: misc_feature
    2011 <222> LOCATION: 23216
    2012 <223> OTHER INFORMATION: n = A,T,C or G
    2014 <400> SEQUENCE: 13
    2015 aagcttggct ttctcttcat gaacaagctg tcgattggtt tggattgtag cctcgatgtc 60
    2016 cttgcattcc cggagatcgg ctaacctctg cctggctttc tccagtttga attgatgctg 120
    2017 ctcgaggtag acagctggag taagagcatc gactaattcg tccggaagag aggcttggat 180
    2018 atctgcaaat cttgcccgga tcgagccaca gttggtcacc aggttatcta gtgatgctcc 240
    2019 tagccgatgg gatatgtctt cgagtgtttt cttcacatca tcagacagga gagctgttgc 300
    2020 tttactggtg gtgtcttctt ctatttcatc gaggtaatct ttgatgtcaa aggagaatag 360
    2021 atcggctaag acctgcaaga gacaatatca tggatgatta aggatcaaga tatgattggc 420
    2022 cgatctcaag tttatgttaa taaaacttac tggaatagta ggtgcagcta attgttcctc 480
    2023 ctcttcaaca tgatgactac ctgcagccga tggagtgcgg ccgcctgatt ctacctgcat 540
    2024 aagaggggaa gaaggaggag gaggctgcca aagggataaa tgttagatat aatcagccca 600
    2025 agtcagttaa tgagatgata gaagtatctt actggtggag ctagtttagg ggttggagta 660
    2026 accgatttct tcctcacggc aattttcttt ctctatattt attaaaattg tgaggaattg 720
    2027 gctataaagt aaatgactgc aaaagtggac agagaaagtt gcttacccтт gccaattgag 780
    2028 ctggagcaga agggaatgga ggagcctgct taggtgaagc cgatggtgtt ttttcagtat 840
    2029 cgcttatttc ggctgcagct tggtcgatgt cttcctcgat ttcttcttca tccagagctt 900
    2030 gttcgatgga tggatctagg gcaggtagat cgtcagctgg cttagctttc tgtcttagcc 960
    2031 ttcttcttcg gagccggggc tgaagtatct gcagccgatg atctggttct ccgcttcttg 1020
    2032 ccggcatcgg ctggttctct gatgagtcct cggagaagtg ctgaggtctt tggggcattg 1080
```

RAW SEQUENCE LISTING   DATE: 09/22/2003
PATENT APPLICATION: US/10/656,394   TIME: 13:54:45

Input Set : A:\pto.pg.TXT
Output Set: N:\CRF4\09222003\J656394.raw

```
2033 tagccgatgg cagaaggaga tggcccacct ccattgggaa tcaagcttgg ggcatattca 1140
2034 atttctttac cactattact ccggcgagga ggagaagatt ctgttgtctg cagatcagaa 1200
2035 gaaaaggtta atcaaggttt aaatcggctg ttggttattt aagtaagagt gataaagtga 1260
2036 agacttacct gaggaatggt atcagggaat aggtccgtca tatacatgga ggccaattgg 1320
2037 tggaacaggt gcagtttcca ttcaccccac tatctgtcaa atgccctact cctgaacctt 1380
2038 gccagcttta tgttctcgat gctgcccaac ggaggtccgg ggatgttcaa cagccgatcc 1440
2039 atcattaaag ttgaggagat gtcgcttctg cattggatct tgtcggcaaa gtacaggcca 1500
2040 attggcaatt gtcccattcc aaattgtttg gccaatgaca tcggatgata aaactcgtag 1560
2041 gagacttgga tatttctccc ttgatggatg ccgactggga ggatacatgg gctgatagca 1620
2042 gtagtaaaga tttctctgga ttgctgaaac ttttcatgat taatatcctc gaacctgaaa 1680
2043 tcggctggca gttcgaaatc cattgagtcg gcatagaaga accaaactca ggcatttttt 1740
2044 tggactccgt cataaaagct gaagaacaag tccttcagaa gttcaaccga taattttgtt 1800
2045 cctgcatcag ctggtgtaga tgcatactct ccgtatgaca tacatctgcg atgggtgcgt 1860
2046 tcttctccat catcttctac aatcggctcc aaccttggaa attcagcttc tgtcacatat 1920
2047 ggccgattga caactttcat tactaccagg ttcagccaag attgcaagag ccaccatggt 1980
2048 ccacctgttc taaccactga gccgataatt atcttggccg atgcgttgtt taacatctgg 2040
2049 tatagatagc cgagaaggat tttgcctaag ggaaattgtt tcttcgttac tagggcctcg 2100
2050 gctaagaatt gccagttggt tgtaggaccg cagcttgatc cgcataaaag gaattttacc 2160
2051 aaccacatca gcagaaaagc tacttgttct ttaggagtga ctggcccttt gcccatatat 2220
2052 gctgtgatat atcctgacca accccccaatg ctcttagttt tgaactcaaa agtgttcttg 2280
2053 gtgtttaggc tcatgggggtt agccgatgag gttacatcta ggccagtgag catgataata 2340
2054 tccagcagcg ttggggtcat cagcccttga ttgaaaagaa aggcattgag agtgttggac 2400
2055 cagaaataag ttgcagccgc caacagggggt tcatctttgg ccgaatttgc tactgtaagg 2460
2056 gctagggctt ggctgattcc gatctcatcc caatgggctt gcttgctatc cgatatccgc 2520
2057 ttataccata caggccagct tttctccaga gaaggccagg atttgaaggt gtttttccaa 2580
2058 tggcttgtgt ttggattggc cgacctaaaa ggagttctat tggtttaggc tatgataaat 2640
2059 tcagtagggt ctagattgcc gattggaccg agaaagtatt gttggtcatg caacagactg 2700
2060 ggaaccacaa caagattgga aagatgctac aagaatagag aaggagaaaa cgggataagg 2760
2061 cgagcgaaaa ccggtctaat gaacggaaaa gggatctagc cgatgggggac ttaccttagc 2820
2062 gtattcggct gatgatgcgg cggtcggact ggtggaggtc gacatcgtcg cgggtggaga 2880
2063 tctggccggg agtggaatcg tctggaaatc gccctgcgcg tcgaggaggt cgccggagaa 2940
2064 agaagacggg atctgcttga gcggtgaaaa cggagaccat ggcgtgaaga ttctctgggg 3000
2065 cgacgattag tatttaaagc agagcgataa cggtcgggaa aatggcaagt gcgagtttct 3060
2066 ctcggagtcg gtatatggca aatccgaaac attatccaat attccggact tggggggcat 3120
2067 gtgttaacga ccaaatttgg taaattctat cactattagc atcggagatg aaaatcagat 3180
2068 cgaagtggaa tccaagatga agatcgttgc ggagacagag taaaaatcgg ctgcagtcta 3240
2069 aatcggctaa ggtcaggatc ggcagagtcc gagttggacg gggctagccg atacaaccga 3300
2070 ttccgataat atgacccggt gaacgtcatt gggtgattcc gatgagcttc aaggtgattg 3360
2071 ccatgcttgg atagagtcct gggaaggcga ttgtatctat taattaggat attctatgta 3420
2072 atttccttag agatatgttt gggcaaaagt ctgccgtaaa gacttatggt atcttagagt 3480
2073 ttgttagaga taatagtcgt gtccgttatg gacgtatctt gtaatcctcg ggtataaata 3540
2074 gacccgagcc ctatgtaaaa aaaaaggaca acacatccaa tacaatctcg gcgcatcgcc 3600
2075 acccttttgc tttactttta tttcgacgag ttcgtgctct cgggttgagc tgcatcggtt 3660
2076 tcgatcttca acaagaggta aaacttgtca tgacgactta tgttcttagg atttgtgctt 3720
2077 ccatctttat gacactctaa tcttgtctat ataattcgtc gagttatcat atatctcaca 3780
2078 tagtcttcga taatatcttt atctaaccta taatcggcta acatctgcta atggaaggca 3840
2079 gctgattagg ttagataatg acattaactt agattatgtg atatatctac cactctatga 3900
2080 aactttcagc ggcttgattg tctagatatt gttcttcttt tcatacttaa tgctgcatca 3960
2081 gttgagtttg atctattaag tcgtgcttag aattgcaatc tctagcctgc tttctggttg 4020
```

```
2082 ccgattaggg tagtatcgga gtttcagccg atcttatctg atttaactac ttttattcta 4080
2083 tatgcttgat tgacacgtta aatccaccct ttatgttagg attttattgc atctaagtat 4140
2084 attaagctta tgtttggtat attctacttg ctttaatatc ttagtataga gtggtatcgg 4200
2085 agtattagcc gatacatgct agatctacct gatcagctat gttttgaatg tatataaccc 4260
2086 tactattaat atatatttcg atctaagtga tttatactgt ctcggcaagg caaccgatct 4320
2087 atcccaatca cttgatttaa gtatataccg atataaggat tatatatcat taatgtgtac 4380
2088 agttgatcga gtagatttag ttctgaattg cttgttgata tttgccgatc gatgtacgca 4440
2089 tgacatcggc ttgaaataaa tgatatgtca tcggcatcta gccgatcggc tatcatttat 4500
2090 gggattaatt gcggtttctt tgttctatct cttgttgatt gcaggatcaa atcaactggc 4560
2091 acgctcatac atccgaaggc gagttttgga cctgcactgg agttaagcag atctcccagg 4620
2092 cctcgtgttt tctgtcaaca taattatata agaaatctta ccaaaatttt agcaagttaa 4680
2093 taaaattttg gcaactatgc taaaattttg gcaatgccaa attttggtaa ggttttttttt 4740
2094 agcatcaaag tgaacaggcc ctggataagg gaatacgtac ttttatcttt gctgattcat 4800
2095 ccaccgcagt gtccgtcttc ttgtactgtt tacgtattgt ttgaatccgt cttcgtgaca 4860
2096 cacaaccttc cccttcaccg ttcgcgagat gatggcctcg cggtcgcggc tccgcctcgc 4920
2097 cgccgccggc gagaacccta tcccacactc caagtccggc ggggagggag gaacggagag 4980
2098 gaagccggag gaggcgctgc ggcgggaggt gacggacctg ggcggcggca gcgaggtggt 5040
2099 gcacgtgccg cggttcgtgc cccgggaggc ggcgtggggg tggttcgact acctcgacaa 5100
2100 gcgcatccca tggacacgcc ccaccatccg cgtattcggc cgctccgccg tccaggtaca 5160
2101 gagaggtcac cgccgccgcc cgcgcctctc attgaaccct tcattttaat ctttgtgggg 5220
2102 cttccctaat cggtcgcaat ttttgctctg ttgttcattt gataaatttc tactagtgct 5280
2103 aagatttcgc tataggttgg tgcattatcg ttgattcttg gaggaaaaac catagtacta 5340
2104 tcttgcttgg tgagattctg aatatggtgc tgaggttgtg gtacttcggt gagtctgaag 5400
2105 aatggttact gcaggcagtg ttgcttacga tttagctgtg gcccttcggc ctggggctta 5460
2106 caaatttaca ctaggcattt gcgtttcccc ggtaaaagct ggttgaattc ataggaaatt 5520
2107 ggcataatga tagtgactgc agctgatccg gatcctaaga aatcatagtc ggcagaaata 5580
2108 gcatcgtgca tgtaattgca gtattggtga gttgttctct ttaacgtctg agctgaagtg 5640
2109 taatttgtgg gcagaaataa actatataag tacatataca ttagtgggat ataaacaaac 5700
2110 tgataggtac accagtggct ctgataaata ttactccctc catcccaaaa tataacaact 5760
2111 tttgggtaga tgagacatat tctagtacta tgaatttgga taggggttat gtccagatcc 5820
2112 atggtactat gatacgttcc atccacccta aaatcgttat attttatgac ggagggagta 5880
2113 actgctaagt ttctgatgtc ttatgtccca aacgatggta gctcctaagc tctgtaatac 5940
2114 cattgtcttt ccagaaaacc acggttacca ttgtcttcca attggagaca cattgatagt 6000
2115 gtaactgttg tgaaagattc tagctcaagt atcccattct cttactgttc tgcagccgag 6060
2116 agatacatgc tatgtcgcgg acgaagggct aacagatttg agatatagt gccatcagcc 6120
2117 tcatgcacat tcttgggatg aattccctgt gctcaaggat atcctgaagg cggtgagagc 6180
2118 tttgccatga ttattctttg caatgctata tatgatttgc agttaatttc aagcattagt 6240
2119 attctaaata gtatcaacta gtttgtattt gatgatgggc atctcaaagc tctcattcta 6300
2120 tctagtgatt tgctgattaa tgtatgttca ataggttcat gaagccctcc ctgggagcca 6360
2121 ttttaacagc ttgctcctaa acagatacaa gactggttca gattacgtct catggcatgc 6420
2122 tgatgacgag ccgctgtatg gacctacccc agagatagca tctgtcaccc tcggatgcga 6480
2123 acgagagttc ttacttagaa agaagccgac gaaatcgcaa ggtaagcggt gcacacacta 6540
2124 ggaaaatttt tggactggca gcctcactat catttgtaga ttttggagtt tagatcacat 6600
2125 caactccgaa atcgatccct attatttccg tcgaagaaaa gattgatccc ttttaatcta 6660
2126 ccatccagct tcacttggat ctggggaagt tgcgccgaag cggctcaagg tcagtgctcc 6720
2127 tcagcagcat tctttcctcc tgaagcatgg gtcgctgctt gtgatgagag gctatacccca 6780
2128 acgggactgg cagcactcgg tcccgaaacg agctaaagca agctcaccga ggatcaatct 6840
2129 gactttccgg cgagtgctgt agcatctttg tgtacagcgt cggaggcagc ttccgggcag 6900
2130 gtcgggcggc tgcctgggct ccatcgctgg cgcgtacact agagactatc tataacatgt 6960
```

```
2131 atataaaaat taatagatca caggaaaaca ctattagtca cacaggagcg atggtgtttg 7020
2132 ccactgtttg catggtagcg atcttatctt tgcctccctc gatcttttgc aattgtgcaa 7080
2133 acttatcacg gacattgttt tggggagact tgatgtttgt gttctgcaac tctgttagtg 7140
2134 catcatacat tctggcatca tgttgtactt gtatcagcta gtccgtactg tgtgcaccct 7200
2135 agtatgcgca gaccttagga tttggtcaaa ataacagatt tagagagatt tttcgttagt 7260
2136 actagttact gccctgtttg cgtctagttt tgtgtgaacc ctgtaacaaa tttgacagta 7320
2137 atacacggct aatgctgtgt ttctggaaaa ttttaaaatg tactggttca agtttcaatg 7380
2138 attcatacat ctgaactcag ttgaactttg tacagatggt tacactggag tcaaaactct 7440
2139 taggacagaa tatcattatt atgctcaaac ttaacatcat aacaccaaac ctaggctgcg 7500
2140 ttcggtagta gtagtaccca atccatctct ctctttttca cgcgtacgct tttcaaactg 7560
2141 ctaaacagta tgttttttat aaaaaatttc tatacaaaag ttactttaaa aaatcatatt 7620
2142 aatccatttt aaaaaaaaat agcaaatact caattaatca tgtaataata gacttcattt 7680
2143 tgcgtgccgg ggaggactcc tcccgaacag agccctaata taggatctac cgatttactc 7740
2144 atcagtccca aaatataaga aatttttgtac ggatggaaca ctccagattc gttacactag 7800
2145 gaaatgtccc ctccgtccaa aactccttat attttgggac ggatgaagta agtgctaacc 7860
2146 agttcagaaa acagaaataa tgttcaacac aagcatatgc tgtgatacag catctgaagt 7920
2147 atcaactcac atgtcacatt ctacatgcaa aatctgctgc ttcagaataa ggcaccccaa 7980
2148 aattgggatg cccattctag ttgtacagta caatccaaga accattgttt attgtttaca 8040
2149 acatttctac atgagtttta acacataatc actattcctg caaataatg ctaaacggat 8100
2150 atgttacatg acctgtggcc ctctcaagga tacgtataca atgaaattcc agggcacaat 8160
2151 gccatagcta attaagttgg aaacaagttc tagcatctag taacattaga agcaaatcct 8220
2152 attccactgc tcttctatac taaacctgtt gctattgcaa agaacatttt ctacatcaca 8280
2153 actgtcaatt ccaaggtcaa ttaaatgaga tatccacatc cccatccgct gcccgtgaaa 8340
2154 tctgcatcct acgaagaata atcaaccgag aaagcaaagc ctatgttgct ttagctgtgc 8400
2155 gttttttcca gacactctgc acatttaaca caaacagtaa aagaactgta acagtaagaa 8460
2156 tgaggaagac tggtacaata ggttcagagc acaggcgatt ttcttacaag agtctcgttg 8520
2157 tcagattcct ccttgctgtt taaattatgg tcatcaggtt cctcctcttt tggctcatca 8580
2158 cctttgccag acactttctc agcttttgct ttcttggcta ctactacttc tttctcattg 8640
2159 cgtccatctg agataacaga acaattgtgc tctcaacttc cttgcaagaa acagcatgca 8700
2160 gattatgggt aaacagtgaa ccgtaaaatc aaccccaaat tatcatacca gattttttat 8760
2161 cattatcaga atctgagtgt gcgagagaac ttgatgaatc cgaatcaata ttcgcatcac 8820
2162 cggcagcatc aacagaactt ttaccccta tctttctgcg tttgttttc ggcagtcctt 8880
2163 ttggtttgcc tttcctcttt gggggtgagg gcctgcaaga taggggtaag accaattgca 8940
2164 ccaaggtttt caagtctaat cattttatat gggcttacct cttttttgac ttctcttgtt 9000
2165 caggcggcgg agtttgcttg ctgctggtaa tgcttttatc ctgagctctg caagttcaga 9060
2166 ttacatatca aacaaactga tgtctatgac acacgtatca gtatgaaata attagaggtc 9120
2167 ttaaatatgg aggagctagt tcaggtggca taagacatcg tttgttcctc ttggttacat 9180
2168 gaggattcta gaatcatctt attctatgat aaaatgcaag atgtagtcag gagatagcac 9240
2169 ttttttgttta gttgttgaac taattactgt tcaggatgcc taattcccca gtgctgtaca 9300
2170 ggacatttc ccagatgctc cagtgaagtt tattatgcag tgcactatat gcaagaggaa 9360
2171 aatccagctt accgtccttg gtttctccct gaatgatcct ttttcgggc ctgcaataat 9420
2172 ttgtaaacaa caataaacaa aaaaaaaact atgacctaat ttaaagagag tttttatgac 9480
2173 acaatttacc atgctatacc tttacaggcg ggtcatcact tgcaacaatt tcccactttt 9540
2174 ctttagctag gttaagcact tcaacatctc catcatcata tagcacctat gtagagaagc 9600
2175 agtcttttaa atatatctgg tatatggtgc attacaactt agaattatat tccagtttga 9660
2176 actagaatta taaatcatac aactgttgca tgttgtttat gtgctcatag tggttgacac 9720
2177 tactgtagcc tgaaggataa cctggtggca tcggctgcta gtgatgagag gactataagt 9780
2178 tgggggtgaa gaacttgagg gagagattta tagattgaaa ttcattgctc aattccacta 9840
2179 gaccagacaa attcctgaat gtctcttata tataggccag cacctaacca tccaatctaa 9900
```

```
2180 tagatagcca actactctaa ataaatcata tctctaagga aacctcctcc tcctctacac 9960
2181 gtgtctcccc ggccatgacc ttatttggtc cgactgtgga ccgtggccct tggcctaatg 10020
2182 cccatgacaa tagtggctga gcaccaagca ttctactatc ttcatataga attgacaaaa 10080
2183 tgaaaaggtg caaagcaatt cattgctttc catacttata tttgtgacaa taaaatggat 10140
2184 caaatagata caacatgtcg ataatttaat gcaccatttg agggaacata ccgtgtgtct 10200
2185 tcttttttgat gaatcaaaag attccacaac accttcataa aatctggtaa agaaaaaagc 10260
2186 aattaaaatc taggccatct tcagaaatta gatagcacat gaagaataac acagatagag 10320
2187 aactcacttc ttatccaacg gccaccaaac ttttattctc tttccaatca ggtcctcact 10380
2188 gcctgtgtca tgtgttgtgc actgcaggca ttaattggtt cttagtaatg atgtttgaat 10440
2189 gaaattttca ctggagttga acaaagtgaa taccattggc acacatactt tattctagtg 10500
2190 attttaattg aaatattgca tgaaatttct cgacatgtca gaatttctta cagaacaaaa 10560
2191 gaaaacaata gagacaacct ttgctagacc agaaaccaat tttggcttct gccttttgat 10620
2192 cgacccattt aaacttcccg aatcaacagt tcgcttacta ctgcctgcct catcagactt 10680
2193 ctgcaagagt tcaacaaaaa tcaatgaatc agaacctgat tttcacctgt agatccaata 10740
2194 gatacagcca tacagatgga aagaaattac ctttggacta ctactcaaga tttcagcgtg 10800
2195 gggcttctta gcaccctttt tccctttgga tacagggggtt ttaacactag caggcgatgt 10860
2196 taccaactca gtatcaaccg agtcatctct ttttttggcc ccctcaacct tattttcaaa 10920
2197 tgagttgata gtttcatctg ggtcaacaga ctgcagtaga agctcatcac tgttttttgtt 10980
2198 gcctttcgtt gaatgtggtc tactcttaga aactgatctc ttgcgttttg gtgttgaaaa 11040
2199 atctacaggc ttgtcattac tctcttttgc atccatccgc tttttctttg gtttgctctt 11100
2200 ttctgattcc cccaaatttt cttgattgtc caagtttatt tctctaacca gtcccaagac 11160
2201 atcatcatct tttttccatgt ttattgaacc agattttgtc ttctgctttc tcccagcctt 11220
2202 ttttgctcct tgagatttta aaatttttcac aattttttcct agaggaactt cattaccaaa 11280
2203 ttcatcagtc tcatctataa gcatcttatc cttgggagat tcaacctgga cggagagaaa 11340
2204 gatctaacgt caaaggccag cagacaattg atgctgagac acagtatgga cagaaaaata 11400
2205 agcattatgt acctcagcag actttgctgt cataagagcc tcaaaatggg ccaacacatt 11460
2206 ctcgcaaccc ggccatatct gctcatcact ctcctacaaa atatcatata atgtcaaaat 11520
2207 aagaagccta gaagagaaaa ggcaagaaag tgacacaaac tgtaaagcaa gtcttaaatg 11580
2208 aatgggttgt ttcatgcttt gtcacaggct taacaagcat atatgacata ccacagaatt 11640
2209 ttcattctga tccttctgaa ctggcgcata aagttgactg ggcagtgaaa ctgtttgagc 11700
2210 ttctgatata tttatctgct cttgacataa tttctttcca ataaggatac caagatcaca 11760
2211 aatagcatgc agtgtctgca aacaacatac ttcaaatcta agtcatacca aatagcaagc 11820
2212 aagatgtatt acagtggatc agcacaaatt taaaacaaat gaactcatta attaaaacat 11880
2213 tttcacacct tggtcttgtt aacatcaacc acatcttggg aatatttgat acttttaaat 11940
2214 atagatacta ttgttgtgaa gctctccttt ttcatgcctg gtacactgtg ctgcaaaccc 12000
2215 tcttcccca ggaggatcaa aagaagcaga tgcaatcgcc tggaaagagc ttttgataa 12060
2216 gcatatatat gcaagtacag caacaatttc agctacaaga atttacgagg gtattgcatt 12120
2217 cgattatta ttctcaaaat tcaacaatca cagaacaaac tagagtctgc caagagacca 12180
2218 taatttaaca gccataagtg tgattttgaa ttgagctaat tgacatttttt tactggaata 12240
2219 aagttgggct ctaattgact tttctcataa caaatccatc ccaaatgtta tttgcacctt 12300
2220 tagggttagc aatctgatgt ttcacacgca aacttagaat tgaaagtgga attagttaca 12360
2221 gcagcataca cttgtatgta cagtgtattt gagcagtgat caagtggtac tatgaagaaa 12420
2222 aacgcaacgc cattacaatg atatcgttga agaaataaaa tcatctgatc tctttcagaa 12480
2223 gatagcagat aattgaccaa cgatttaaaa gtctcatatt tccatgagtt gagggcatca 12540
2224 attaaacaac attactagag ttgcttctac ccccaagtga ttataaccct gagtgattat 12600
2225 aaagcatgat ttaatgatgg acggaaatta gttctctata agttacatgg gtaaaaaatt 12660
2226 caatagacag attaaaacag aggcactatg tgaatgaact ggtcattatg tttggagctt 12720
2227 aaagtattct tttcctccaa gcatgaccgt ggctattctt tttaatagat cagcaaggag 12780
2228 aagggtccca aagtcaatat gttgggaaga gtctcataag ttgttgagta gcagggtagt 12840
```

```
2229 gttggtgcca aggcttgtgt attgatgtgg ttttgcttgg gtgagtgtta tgttgcccct 12900
2230 tttcttcgtt tgttctcttg gatgggtata gtgtgactaa ttctatttttc cactcaagga 12960
2231 tgaataaaca gagccccagc catctgttcc caaagaaaga aaagaacaag caaactaatg 13020
2232 gtaaattggt aataagcatt agaaaaaaaa actttgagcc attattagat accagtaaat 13080
2233 tggaccaaat gcttcaacat cctcatgctc ttcaatgtta ggacatgatg gatcatgaga 13140
2234 gagggcatga accaaatagg aaatcatata ttctggataa gcagtgagca catttgtttc 13200
2235 cgcttggaca gaaagttggc gcatcttaac ttgctggcat atctgcgcaa cctcaattat 13260
2236 gttgtgctta aactgagaag ggaagaaaa caaaagaatt aaagaaacat attagaatga 13320
2237 gtacagtggt ggaaatcaat taatttttcg agtttagagt atgaacctct tcatactgtg 13380
2238 gggcatgata atcatccata gctaacaaga aagcacaagc atattttgca tccaaggccc 13440
2239 tttccttaat atattgatgt actttactaa gaaataattt cctcacctga ggaacatcat 13500
2240 cctggtaata aaagaaacca taaatctcca aagaagatac aagtgaatca tgtgaaagga 13560
2241 acagtaagag tatgctaagc tgtattatgc acaacgcata cctgtgaaat cctgagagtc 13620
2242 aaatagaata catcaacagg cactttgtgg tcccattgtc ttgataagcg gagaacagct 13680
2243 tttgctgccg ccagcctcaa atgggcctta tcaatagtgc tgcaagtaat ggagtagtga 13740
2244 gaaataacca aacacacaga caaagagaga gagaagaatg gcacattaaa aagcatatct 13800
2245 gttggtagtt tgctaccttg aaatcatatt tgcagaaata tcaccatatg taaggatatt 13860
2246 cttaaggatg cccattaatt tttcaattcc cggatgtgct tgagcatctt tgcaaggttg 13920
2247 acagctcttc accaaagttt taatgccata aatctaggaa gaaaatacaa aacaacatgt 13980
2248 agaggtcaat taactttgat ggatggattg aagtgagacc tataaaacca.taatttcact 14040
2249 aaccttcaat aaacaacttt gagtactatc actccattca gatttatgag cagaaacgtc 14100
2250 gcccgaatcc tggtgatgca ctccgaattg caataaaaat ggaaataaaa tggagaagga 14160
2251 aaggagaaat ttaaagagcg taagtcttac atcattgcag tcaagaattt ttttagttat 14220
2252 aaaatttatt atctcttctc cccttgtttc aaaaattggc attgctatct gagctataca 14280
2253 ccccaaggat tgtaagatgg atggcaaatg cactttcttt tcctccaaca agtccacaag 14340
2254 cctctgcaag gttacgaatg tagagcataa catgttagaa atctcaaata tatgatccaa 14400
2255 gaagaaacag ctaacaacaa atttgaacct tgtaaagaac agatagagac atcaggccat 14460
2256 catctttttgt tatagcagcc aaagcatgaa cagagtattt tgcctgcttc cgtgttcctt 14520
2257 ccaaacatag ccgctctagt agaagagtaa tggaactgaa acagaaggca cagcatctta 14580
2258 gttctatact cttatatcct tattaagtag tgaaaagaat aatgtctcat tcatttcaca 14640
2259 aaagttgcac cttgatgaag ctagttgttc acgaatgttg ccaccagcct tcgacagaac 14700
2260 atgagcaata ccctctttaa gtagttcatt atcctccttc aggagctcaa tgatatcttc 14760
2261 ttcaagtcca gacaaaagtg aagggaagaa actagatact gcctgcaatg tgtaaaacaa 14820
2262 gaagtaatgg gaactgtcct gctgaagcat gataaagcaa atacacacaa gggatataga 14880
2263 agagataaac ttgctcagga agaaaaatat cgggcattca taaacataag taatctagta 14940
2264 acggttactt gctagctagc ctgacaatgg tctttcaaca gcaatgctcc ttgctagcta 15000
2265 gcctaacaat ggaattacca cacaacccca cgcaggcaac tcctgaacta gttgttgcat 15060
2266 gcttccttca tggcaggaaa ggatgaccaa aacgtttcaa caaatcatac cgttaaaaga 15120
2267 tccatgcatg atgacataag ttttgtattc ccagtagatt tttggtcaga agcttcagaa 15180
2268 aggatctctt tgacatattc cttgttcaca agtaaatatg agcatctcat cgacaacgtg 15240
2269 ctcacaaaat catgtaatgc atgtttttca ccaagtttcg ttagcaaatc aacctgcaga 15300
2270 ttacaaataa tattcaaata tagcagcata caagtaaatc aaattaggta actgaaaagc 15360
2271 aataaaaaaa gtcaagtata cacccttttt ttcatatgaa gagttcatat tggtcaagaa 15420
2272 taatgcagaa aatacaataa aataactatt atagaggcaa ctatacctga ctacatgcag 15480
2273 cactggatga gataaatgga accacaaaga agaaaagcta gtgttgcaaa caagctaaaa 15540
2274 gaattctttt tcttaacata tactgctctt ttttctattt catattgcaa gccaaacaaa 15600
2275 ataatcatct gtaatctgta aatcaaatgg agtagcaggt acccgaagag accaatcttc 15660
2276 gttgaatgtt gttgaacaat caagcaagct tgtgaatata ttccagatgt tggcatcttt 15720
2277 tatctgatga agcatgttca agtactcctc agactttgta tgatcattga acaaacgaga 15780
```

```
2278 catgctccgg aaacacccca ggatcttttt tttcatatca ggggtatctt cctgcttgca 15840
2279 aaaggaactg ataagatagt gatagaacag acagtaattc tgtagtgcat ttgactattc 15900
2280 aagattcacc aacctggctt gtctgtcgaa gggacatgta cttcagcatt tcttgttgta 15960
2281 gcctgaaatt gaagaagcaa caatatatca gagagagaga caatttatca aactaaacga 16020
2282 tctctagaaa gtaaaaatag tgccagacct ctgttttttgc agaaaaattt gctcgagagc 16080
2283 tttcatctca actttgtcga aatgtgtgac agcagttacc caatgtttca ctctttcctt 16140
2284 tgttggatac tctggtggga acaatgaacc acataaaatt gattcaattg actctggtct 16200
2285 gcatcaaata aatcaaacaa atcaatgggc atcacctaac cacaatatct tgccacagaa 16260
2286 agaaaaggtg atgttatgga attcttgtct gatgtgttgg tgaaagagca atgtgaaatg 16320
2287 ctattaagaa aatatcatgg aaagagtacc ataggaagca tgaaacatta tagatggagt 16380
2288 agtacataga gcatatctta gaggtaagca aagaacagca agatatcttg catgtacaat 16440
2289 ggggattgag gaagcatgac atctgatcat aaatattgag cagtttacag gtttgtatat 16500
2290 aaagcataat acaaatcgcc acaaggatat taagtaccct tacctaaaat ctttgtcata 16560
2291 gaggcatctt aatatttttc caggaatcca ctcaaaatca tcagaattta ctgagctatc 16620
2292 agaaccactc tggcaataga acttgtagat gtcagccaat ctctccatgg tatagcactt 16680
2293 cacagaaacc tgattttttt aaaaaaccaa ttatacacca tgcattcaag tgaatcgtac 16740
2294 agattatatt catcaaacat aaatattgaa agatgcagca aggggcaaac agaactaact 16800
2295 gatttatcac ggacacgctc cgcaacttgt ttgatagttt caactgggac tgcaccaagt 16860
2296 gaatggcaag ctacatcaca aatagcagct accacttgct ttctcacatt ttcctcataa 16920
2297 tccaacaatc tgtcacaaag tgcctctgcc·aaggagacaa ccatcagtac aagcacaaat 16980
2298 gatggcacat tcagattata ttatcagcta ttcagcaaat agctacttac tgataatctc 17040
2299 ttgagcttca ggacgggaat ggtttgacat cagacatttt ttcaaatgct caattacaga 17100
2300 aacacgaatt tctacagctc ggtcagtcaa tctcttcagg aactcatcga aaagagattt 17160
2301 aaatgattcc aagataggga ttccaggtaa agagaaaagt tcgccaagta tttcaactgc 17220
2302 tttagaccga gtttcaactt catctgccta gaaaatgcca attacaaact ctaattaaca 17280
2303 aagacaaacc aaaatttggt cacttaaatt aagatatatg gatttttttt ccggaagatg 17340
2304 gaagattatt ttctgttccc caggcaataa ttatttcata ttgcacagta ttgctttaag 17400
2305 tatataagta aggttctaca taccagcagt tccccagtta tataaggtac caccacttta 17460
2306 agaacctttg gagcacactg gtacaaatca aatatgactt cgtgatggtc aatgctatta 17520
2307 ttggtagaag taccatcccc atccaaggat gatgtcagaa tcttccttat gtatggttca 17580
2308 agttttcctg cagagtgctc tataacatgg cgagcaagct tgcgtgcagg caaagaaaca 17640
2309 ccctagagat taaaaaaaaa attgcacatt aagacttatt gaaggaataa gtaaaggaaa 17700
2310 aggacaaaat aatagagaag cagtttctct aacaaatcac agaataggtc caaaaaaaga 17760
2311 tttaaaaatg gaaggcactc acagtttttt tccggcctaa agttgataga agtacattga 17820
2312 gaaggctttc ctctatatcc tcgctttcat ctataattag ggccattact gattgcattg 17880
2313 aatttacaat atttggctca tgattgtcac tgcatcaatt caaaacacaa tgagtaaaat 17940
2314 atttaagcta tcaactagca gcaatattgc gtgtatgtca cttggtagca ttaatagtct 18000
2315 tatagtcaat· aatttctggt tgtgtgcttc tgatttagta caatagaatg aaatattta 18060
2316 catgtcaaat aacttggctc catgaaacag catactataa ctacactcgt gatggaatga 18120
2317 ggagagatgg ttgatgcggt gttctaagtt gaggttgtta·gcatatatgg gcttcctaaa 18180
2318 ctgcaagagt tcaaagaaat caatgtttaa aacatataga gcagcacccc atatatcaaa 18240
2319 actgcatgtt aacctgcatg agtgtaaatg tgggcatcca ctcattaact tctctttgga 18300
2320 aattgaaggg tcgatagctg tatcatgact tctcaaaaaa tgccttaata ctgatcaaat 18360
2321 aggtatgtca ttcaaatgcc agtaaatatg gtcctctaga tttgaattta caaacaagtc 18420
2322 ctttacgcag tgcatatatt gaaaatgagt aagtacacat cttagtcctc aaacagaagt 18480
2323 taaaacagca cttcgtgaac tcatacttga attctattga acatttttttt aaaaataatt 18540
2324 agaaacaagc atgataaaat aagtcatgtg caacaatgaa caaaatgtgg aaactagtcc 18600
2325 atgtgcggtg aagtatataa aaccaacaac attacatcca aatggataca gaagtattac 18660
2326 ctgataattt ctaaaaaaga tcggaacatg tctgcaatta gatcattgca ttcaaggtct 18720
```

```
2327 aacatgacaa cacatgctcg gtatctcgca actgtttcca gaatagcaac tctcctgcca 18780
2328 aaggatttac cattaacatc attgagtcca ctaaatgtat ccacaatcag atgaaacatg 18840
2329 tcctgcaaat gaaattaaca ataatcctca aatgttgaat aaatatagta aaccgagtca 18900
2330 aatataatta gtatattgct ttctggaagg atgcttgatg ataaatgata ataataccct 18960
2331 taagacatca tcactgtatg gagcttcagg agcagttatt cttgtaattt cacagaagca 19020
2332 tgttgccaat agtactttga catcttcatc gtggtgtttc aagaattcat ctctggcaac 19080
2333 agcctttaga catggttgga tagtttccat cactgaggga cctggtgact gctctactcc 19140
2334 atgtaggcat tctgcagctt gctgcagtac gatcagcatt aatagcatat ccagagctta 19200
2335 cttaagcaag gaggaagcat ttcaagcata cagttagtat tgctacagat gcaagccagt 19260
2336 caggctgtcc aaccaattga ccatattaat tcttttgttt gacaaattag tatacacagt 19320
2337 caggcatgta tacaacaaaa atgatatcct ttaaatgtca agtgaaccat caatgagttg 19380
2338 gaccaattaa taggcaatca aatatagtcg gtactgtact actgctatta ctccctgtga 19440
2339 cccgttctag gaacagtact acatagcaga taaccatatt cttaagaatc aactttcttc 19500
2340 agtcattaat accaacaaaa tttcagtgcc ccttataaaa aaaagtgtat tttttagatt 19560
2341 tttaaccaag cttaaagcct atctgcttca gctaaacaaa ccaaaatggc tgattactaa 19620
2342 gggggaagtt tcacatgcaa actacttgtt tctggagtac aatagttgca gtcgaatgaa 19680
2343 tccaggtaac agtgtaacac ctaagcaagt tcaaaagata tgatccctcc taactatttc 19740
2344 aaatcgggcg ctagctgaaa ggttccatac caaggcaaag agaacaagga aagaacaatg 19800
2345 acctgattca ctctaaacaa tagcagaacc acagtaaaca caagagcaat tcagatgaac 19860
2346 tggcattacg gattccaaac ctaaaaatag gtgtgcctaa acctaccaaa atggcctagt 19920
2347 taatatatag gtgtcaatca aatcacccaa gtgcatttcc acaagtatca ttactgccta 19980
2348 aaaatttcat ttacagataa agtagctgat gatccttcaa taaagatagt ggctgtctct 20040
2349 aactgcaaac tcgataatcc gatctacatc acaatatcca atagcataga gttattggca 20100
2350 ccagcacata caatacattg gtcaaaaatt taaactaggg tacaatgttg gccaactgcc 20160
2351 atttttccta gctgattagc tataaacaaa agaacaaaac agaagtaatc taagagcata 20220
2352 cagttagaaa agcactcaat gttacccca caacagacaa gtgtcgggat acaaagagtc 20280
2353 caccagtttc agattttggg atctaaaaag taggattcga atgagaacct accaagtaac 20340
2354 tttattctaa gaacattgct gagaaataat accatgtgac catagaaatc aatgtactgc 20400
2355 tagccgacaa aattgccata taaacattat cataggtcta gaagtgcttt ttgcatttcc 20460
2356 gcttaactac tgaacaccat ccactacaat gttaagcttt aatatactaa gatcccaaaa 20520
2357 ccctaacgat aagcgattaa gcacacaaaa caagccaaaa atacacatgg gtcccaccac 20580
2358 tgcacaattg agcacccaaa accttaacat agttaaagtt cactatgttc ttagtcccta 20640
2359 tagaaaatct aatcagccaa aagaagcaaa gagacaccta gaaggaaatc actaagtaca 20700
2360 acagaaacac agcttccgaa ccattaactc cgaattaccc aacgcatttt ttattttggg 20760
2361 aagcccacaa ctatcattca agctaaacca tcaactccag cagcaaaacc ctaatttgaa 20820
2362 aaacacctac cttctaaaat cttgtacctt aaattggctg aataagcaag attcattata 20880
2363 ttaactcaaa tgagctggtg tctgaatagt tcagaccata aaattttttg acaagataaa 20940
2364 caaattaaat ttattctaaa aaaattatct ataaaattat gaagacagaa atgtggtatc 21000
2365 aacaggacat aaaaatactta tagatatgaa ggcaaaactc taatatgtaa tatgtcctag 21060
2366 gtctataagt ttccacatga acatgaaatt aatttactta aaagtcagct cactgaccaa 21120
2367 aaatcagatt tttctcttct tcagtacaaa atgtcaatcc accacagaac caacctacaa 21180
2368 aagtgaagaa cttgcaatag taaaaccgca acagcacgcc acgaaactag cgtctttcac 21240
2369 cactaaaacc ccataaaccc taatctggca cgacaaaact gaacctccct aatccagcac 21300
2370 gacaaaaagc tccaaatcgc agcattgcaa ttcatcaccc aaaacctcta acacgccaag 21360
2371 ctccagcaga aaatgccttg cctcccgagt agtcccacca aacacagaac gggaacaata 21420
2372 ctacaagcaa aacgcaccac gtacaccgcc aattccagca gaaacgcggc ctcccaaatc 21480
2373 tcacccaaaa aaacaaacct tcgtctccta attacccggc acctgcacat aaaccgtgcc 21540
2374 ttggacaccc tcccgagtcc caaacagcta atttcaagct aaagcaacca aattccatca 21600
2375 ccaaaaaccc taattcgaac ccaaaacccc accacaatcc cccaccgccc taaaccctaa 21660
```

```
2376 acctgccgaa ttcgcccaca gatccaccca aaacccgcaa cctcacaccc ccctcccctc 21720
2377 ctccacaacg ccaaagcaaa agcaaccaac caacccaacc caagcaccga acctcccaaa 21780
2378 gagcagtaac aagtcctcac ctcgagcagc ttggcgaggt cgtcggccgg gtccggcggc 21840
2379 gccgcctcca gcttctcccc gagctccttc agctgctcct ccgctgcccc catccccggg 21900
2380 ccagatcggc cgccaattca cgcacctccc tctctctctc tctctccctc tctctctctc 21960
2381 tctctcgctg gggtttctaa tctgagagga ggaggagcgc cttgtctttt tggctctcgc 22020
2382 tgtttcgaaa attggtgagg aggagagagg cggagagctc gtgaacgaa tgccccagtt 22080
2383 cgggatcggg tttgggtctc tctctctctc tctctctctc tctctctctc tctctctctt 22140
2384 ctctctctcc tgctgctacc gtttggaagt catcatgcgt cgggcacggc gccgcgtgtt 22200
2385 ccgcgggttg ttctccgggg gttgtggctg acgcgtgggg ccaggaggag gggcgggccc 22260
2386 gcgtgtcggt gggggggacg gtgagggggt tctcgggtgg gtttaggagt ttttttagga 22320
2387 cagcgttttt tgttttttat tttggtttgg tttgggcctg cggggtggga tactgggatg 22380
2388 ggagagagat gcgtgcgacg atggggcggt ggattcgggg ttaaactgaa gtgccggagt 22440
2389 gcagtttgcg tttagggaaa tccggtgatc tacggtgtgt gagtgctgag tacagtacta 22500
2390 ctagtttttt ccctccactt tgtattacgg tgttcaaaaa tagttgtttt tttttgccaa 22560
2391 ttatgtcctt attaggaatg ttaattcgcg cacgtgttat ttatcacatg gattctaata 22620
2392 aacctagggt ttatcgggac atgtacgagc agcgtcactg cggcccaagt ggtcgagcct 22680
2393 cgaaaggatc gaggttccac agtgggcgtg ggatggaggg ggcaactagc ggaagagaga 22740
2394 agtgggagtg tgcttagagg gatggtctga gaagcgcccg accgacggtc aatggtggtg 22800
2395 acggcgaggc aggggtggc gcccactagc catgggttgg gagaaggcgg tggagtgggg 22860
2396 tcggcggtgg gagaaacaag tgtcaaccag ttaggttggg tgcgcgcgga ggacagcagc 22920
2397 aagcaggtat tactctgtca aaaaaacaaa ctctagctac gaatatggac acgtatgtgt 22980
2398 ctagatttgt aattaggatt tgaccttttt tagacggagg agataggctg caacaatggt 23040
2399 gtgcaaatgc gggagatagg agtggcatct tagaggagat tgagtgggag aggataaggc 23100
2400 ggagagggaa atgagccgtg ggccagcatg gggtgggtcg tgtatgcata ctagccttcc 23160
W--> 2401 cctgcctcat tggttaaggt atgagttata agccaagaaa aacaaatgaa gcaaancgat 23220
2402 attctattct aaaataataa aatgttctta gctgtccaga agctaaagct aaaaacaata 23280
2403 gaaaaaccaa catcaaatct gaataccctc ttgagcggtt gtcggttttc acaataatag 23340
2404 gcttgaaaca aggaaaactt tggatatttt tctgaaaatt aaaaattatg tttgaatttc 23400
2405 ttgaatttgg tggtatatat gctaagcggt tccttagttg ttaacttcct tgagatggcc 23460
2406 cataattact ataatcaaat ggttatgtcg acttttggaa ccttgtttca caaagattaa 23520
2407 cataattgaa tgattttac aaatatgcat gtgccagttg gagaaacccg agactactag 23580
2408 tatggaagtc atcttttttt taaaaaaaat tttgaggttt caagtaaaaa attttcttgg 23640
2409 ttcatgtaga aagttaggat tttaatttga agttgtagag ttttgagttg aaagttagtg 23700
2410 gacctcccat aaaactatct atatatttca atttaaagtt tgactctaat gtagaaagat 23760
2411 tcgagacttg ggttgaaagt tcaaggccac aagtaaaaaa gtttgaaaat ctgagtaaga 23820
2412 agtatgaaat ctaggtcgaa gtttatttca tgagttgaaa gtttctttta ttttttttcc 23880
2413 aaggctatgt gtggagacct ctaaagagaa gggcatgcca tacggcgcat ggtacccata 23940
2414 tgggaaaact ttgaaataca ataaccacca accattttgc ttaatatgtg atcgctctga 24000
2415 tttataaatg attaatcaaa tacaaaccaa agggagaagt tgattaggag ctcttacccc 24060
2416 acataacttg cccaagtcac atgttccaaa ttgcaatcca tgcagaaacc ttttaaagca 24120
2417 ccacatcact tgcacttgtg tttacttagg taaccaacta ttcgatgttg attttgtatg 24180
2418 gaagtttttt gtttttatag tataatgttt tatgtctaga atttctggca ctaggcagtt 24240
2419 gccaaccgaa tattatacac cagtgttgtg aatattgttt aaaaaagcat atatcatgaa 24300
2420 aaggagggtt atcgtacttg gttcctagta atattgaaat ggtcagaca tctagggttt 24360
2421 ttaagctatc aatatagtaa attgcacaag tgatatacga acttgtaagg ttagtgcaat 24420
2422 ctagtataaa acttgtaaaa tacttgttca tgtgcatgac ttgagtagta catgcaaaca 24480
2423 aaggcaaaaa cgtcacacta tgtctaatct tgctgatgtg gatgttgatt aggatgctgc 24540
2424 actcacacgc gacaagagcg ctaggcatgt tatgtttgga agtagccgta tatactggat 24600
```

```
2425 tacttggttt ctattttgtt ttccttttct aacctgcatc cttctttcgt ttataaacaa 24660
2426 cgcctttctc aacacaatta atgtgccttt gggtggacta acatgtataa acccatgtgg 24720
2427 catcctaatc aacatccaag ttagcaaaat taacgtacta ggcatgtagg ccattttgac 24780
2428 cttggttcgt agtaactacg caagttcgta cacaagttag ctataagatt cacacacgtc 24840
2429 tcaatttcat atactacaaa tacaatttag taagaaaaaa aactattgta tctagaaaag 24900
2430 ttatgtattt aaaacacagc atggtatgat tcctaattat cgatacatgc atggagactt 24960
2431 gtcatattta gaatctttat cattacaata gtaaaataca gggacttctc aagatgaact 25020
2432 tatccacaaa agacttctct ccatttattt atttcctacg aaagagttac cagattgctc 25080
2433 gttgcataat ggctcatctg atgcagaatc ccagaatgag gttgtaaatt agaactattg 25140
2434 tctctgattt caagtataga taattttaga ggtgtgcaca agagttgatg acctttatcc 25200
2435 tacagctata ttatacattg aaaaatgatg tctcatttat atataggaga gatgccattt 25260
2436 gtgccgtttc acacaatcaa atattttttct ctttatggct ccaaaggaga aatgcaccac 25320
2437 tgcctttata ttagagatgg caacagttaa ttcactgtcg ggggtcatct ccgcgtcccc 25380
2438 gtcaccgagg tgataaaatt tcaccgtccc tgccccgtc aaccacgacg gcgctatatt 25440
2439 ttcaccagcc ctgatcacca cgcggtgaac ttttgccccg tggttacccc gtccccggtt 25500
2440 aaagaaacac aaatcaaatc agcacttgag tagttaaaca caaatcagca cttgagcagt 25560
2441 taaacacaaa tcaaatcagc gctggcggca agcttcgggc agctcccggt ggcgcggcga 25620
2442 tggctgcagg ctcccggctg cacgacgaca actcccgcgc ccgcgtcgac cgctgcaggc 25680
2443 gacaggtagc gcgacgctcc tggcggcgtg tcgatagagg gggcgggaca gtagcggcgc 25740
2444 gcgcgagagg aggcgacggc gcgcaaggtg gctggtggtg gtggagtggt ggtggacagc 25800
2445 ggtgcgccgt gcgcctggtg gtggtggttg tgtgggcgac cgcgtgtggc tgcagcggag 25860
2446 agccgctgga ggagaggcgc tcgactcgat ctggaggagt ttgaccaaag actagggtta 25920
2447 gcttttatat atacctgtta attgggcatt agtattatgg gccaaaacgt ttaaaaagtc 25980
2448 tagatttagt catctataca gtaaagtcgg gtcaccgcgg ggggcgggga cggtgaatgg 26040
2449 tgcaccatcc ccaccccgt catccccgat ggtgctaact ttggaaccat tttattcacc 26100
2450 attgtggata gatattaacc atcccagtca cctaaaaggt gaattcaccg cgggaaaacg 26160
2451 gtgaacgggg ccccattgcc atctcttctt tatatgtaca tgaaagctag ggttggagca 26220
2452 tattgctcat gcctaaatcc aaagatacaa agcctatcca aaatggctcc atattcctct 26280
2453 gcattctcca tccatctctc taaatttagc tccatatttt tttaatgacc catgactctg 26340
2454 ttttcaccta aattggctaa atacttgtct tacttttagt tatttatgaa tataatatgt 26400
2455 taattactct taattattat ttttataaat tagttgctct taatgtatat atatccaact 26460
2456 actataagat agggagtgag tttggatccc aagatttaaa aaggaagagg gggggggggg 26520
2457 gatggacaca gagtaggata agataggggag tgggttaggg atatggatag aggggggattt 26580
2458 ttgggtgttt ctcttaaaga gaaaagtcta tatttagtta tgcaactatg gctttggtat 26640
2459 gtgtctaagg ctctgttcat ttctggaagt tcccaacctc cacctcccat ttcccgccgc 26700
2460 atgctttta aactgttaaa cgatgtattt ttaaaaaata tttaggaaag ttgttttaaa 26760
2461 aaaatcatat taattcataa gttttttat ctaatactta cttaacaatg cgttaattac 26820
2462 cgttttgttt tccgtgcgtg gaggattagt tccaacccac cttgaagaac atagcctaag 26880
2463 gcggagtttg tttcagcttt taggctgaaa ttttgtgatg ctacgtgaaa ttttgatgag 26940
2464 ataagtcatt agcacgtgac taattgaatc ttaattatta caaaattaaa aatatatatt 27000
2465 tatacatagt aattttattg aatgaaacgt accgtttagc ggttgggatg cgtgctcata 27060
2466 gagaaccatg aagtagctat tccaaaacat tgcttagaac gcaccctaaa aaagaccatg 27120
2467 gctttggtcc acttttgatt tctaaatcat gaactcattt acttttggtc catgaactct 27180
2468 caaaaccgtt cgcatttcac cccataagtt caaaccagga ttgttttcaa tgatgtaacg 27240
2469 tcaacatgga gttgaccagg gtgatgatga taataataaa caatagcaaa ataaagaaaa 27300
2470 aaaatactgt gacctacata tgtcaaactt gcttcctttc cttctctctc cataatccta 27360
2471 tatatgttat ttactttaaa ttgctaccta aaatgacaca tgatgccatg tccttaaaaa 27420
2472 ccctaccgtg attatgtcaa ggtttgaaat atgaggcggt tataagagtt gagggctaa 27480
2473 cagttacagg gtttcatagt taagtgaact ttttttcttc ttaaaaaaca taacagagag 27540
```

```
2474 tgcaaaacag aataggaagt gtgatataga ggtggattgt attgcctcta ctaaacgaat 27600
2475 ctggaatttt acattgtaga ccttttaaaa acttatgtta caaatagatg gctagaaaaa 27660
2476 tttatttcta gaatgagccc tttttgcagc accaacgcca ttattactat ggtccaacat 27720
2477 gatagcacca atgacattat tgccatctcc cttgcccctt aaatggaagc taagggctag 27780
2478 tttggttcgt ggccttaatt ggccttgcca atatttgtca atttcaatag tgtttagtgt 27840
2479 ctatttggtt agaagccaaa ttttgacatg cctaaagaaa tagaccattt caatagtgaa 27900
2480 attaggctgt tttgcttcaa tccaaacaca actttatctt gccaagatta gccatgccaa 27960
2481 aacttactaa aatttgatat tgacaaaaat tggtaaggtc aatttaggtc acaaagcaaa 28020
2482 ccagccctaa gtctcggatg tgaaggggtt acgttcagaa cctatttgta aaaaaattcc 28080
2483 aaaatactaa aatataaatt atgtttctta catataggtg tttaatgtta aatgtaaccg 28140
2484 aggacctatt tataattttt tttataaact attcattctt ttgaatttct tttataaata 28200
2485 gattctcgac gcaagtgtta ttaccgttga cgcccttcat attagtgact tagcttttac 28260
2486 ggtgaagagg tacaaggaca attatgctag ccccgcgaaa atgatctatt tctagaataa 28320
2487 gttttttttaa aaatctattt gtaaaataat ttttcgaaaa taacaaaagt aaaaactgct 28380
2488 aaacgaagag ttcctgcatt tcaaacaata ataaactatt aggaaaaaca cgtgatccgg 28440
2489 tgacaacact agtttactcc tctgtgcacg tgggtccagg caccggttac cgtttggtgt 28500
2490 tgtcctgttc cggttcctcg gtgtccagta gttccactgg gtggttggat ggtccgctga 28560
2491 gcgcttgggg cccacgcgta gccttgttct ctggataaga aaactgcact tccatttctc 28620
2492 gtgaaaatgt ctactggtag aacagagtat gggccggccc actaacttag cctaagtaac 28680
2493 atacctcaat gggctctcat agcccaatac cccactgctg attttttttc ttagggcatg 28740
2494 tttaaaatgc tggcaaaata aacctttcga aaaaaaaatt aagtcgataa cattgtcaag 28800
2495 ttttgatagg gtaagttttt ttttgggatg tgtttaattt ggtgcccaca tatagggtg 28860
2496 gaaaaaaaaa agctcgaagc tcacgactcg aatttcaggc tcagcttgga tcgactcgag 28920
2497 ttcggagtct taacgagtcg agccgagaca gctgttttgc tcgttaagct aacgagctga 28980
2498 tcccgagcca gctcgcgagt cacttttgtag gctcgttaaa ctctcatagc ccaagaatcc 29040
2499 tacaggccac agcccaatca ggtggccgaa cccagtaaaa actccctccc cgactccctg 29100
2500 tcttctctaa accctatcct atccgccacc tccaccaaat cgcaggctcg caggcggcga 29160
2501 ctcgcaacca ccaccaacac caagcaggct gttatcgtcg ccttctcctt gtgccgtcgg 29220
2502 agcgcgccca ccggctgctc ctcccgcagc cgcagggcca cgctgacgac gccgctcctc 29280
2503 ccgcagccgt agcaccacgc cgaccacgcc actcctccca cagctgcaag gccactcgct 29340
2504 acctcctagt ccctggaggc ttgaaccctg ctggtctgct tcatggatca ggagcgccgg 29400
2505 ttggcaagca tggaatccaa gaaccgtagc aaggggaaga aattgtcaag agcttctccc 29460
2506 tctagtttga ctccagccgg cagccacctc gcctctgttc agaagccacc aagatagaga 29520
2507 cctaaagcaa atccaccaac ctcacatcaa gcaagtgtcg catcaatatt tttcacaatt 29580
2508 tgtagcaatt ttttttccta attttgtcac tgattgaacc attcaacttg tgatgcacaa 29640
2509 tctgtagtaa gtgttctata ggtttgtttt cttattctgt ggtgcactga tgatggacat 29700
2510 agttatatat tgaattggat tatacaagga cctaatggag ggttcattca gttaacgagc 29760
2511 taaacaagct caatgagcca gctcgagcaa gctcgctgag ttgagttgag tcagcatttc 29820
2512 agctcgttaa gcctaacgag ccgagccgag ccgagatggc tttttaaggt agcgagccaa 29880
2513 accgagcgag tcgagctgcc tcgatatcca cccctaccca catataggcc atcaaagttt 29940
2514 ggcaacattt ggaggttatg atattttatt gtgacgttga taaattcctg tgagcattac 30000
2515 caacgtttgt ttacaaacta aatgtattaa tatatcattt tcctaaaaaa aatgttacga 30060
2516 ttttaaatgc catcaatatg aataaagccc ttaatctctc atcctactgg ctgccgtggc 30120
2517 acctaatagc acatggcatg tccacgttgg caacgagcgc gccacgtaag tatgtgatgc 30180
2518 tgcgaaaagg acaaggccag acagagtcac agagctagct gcgtccagct aagcctcgtg 30240
2519 cacgtaccga ttccaatgcc ttctcctgga ggtaagtatt tttgttccac ttgattatat 30300
2520 ttctttggca gatgacgtgg acgctgccac ctggatgctc tggaatccag cgaagtcagc 30360
2521 agtcaaatta acaggtattt tacaattttt tttctgaatt attgtggtcg tgttgcatcg 30420
2522 gtaagagtaa caccaagctt aactttcctt gatcgatgct gcttttactc aaacctggaa 30480
```

```
2523 gagatggtaa tattttaatt aatcagtgag aaaagaaaaa ctgatgtgaa cgggacaatt 30540
2524 tgcacgatgg gggaataata atattatttg ggttgggttt tgttaaatac tcctacttgc 30600
2525 tttgtctttt ttctcgacca catgaccaaa tcgagctgtc acaactcgca cgtccataaa 30660
2526 ttaagaatat tatgctaatg cagttgacat tcgacggcag ctagcaagac ggagtagctc 30720
2527 accaaatact attgctatat atctaattca accagcttgg ataaatggtg agctgaatgc 30780
2528 ttgctcaaac actcagactc accaaccata ttatcatgtg gctgtctatc cagattgtca 30840
2529 agattttggt catgtgatat atgatatctc tataatgcat gcatgccttt ttaatgaata 30900
2530 gttcaatttc ttacttttgc aggccaattt gttgtttgtg agtggtcaat ctaaaattaa 30960
2531 atctaagata actttgatag gatggatgag tagatttttt ttaactaaaa tgtgaaattg 31020
2532 atgtcaaatt tgcatgataa gttgccgttc caacgaatag cactagtaaa acacaatatt 31080
2533 tcgtgaatgc atgatgtttg aaaatgatga aggtaaaaat taagttgacg cacgtaaaac 31140
2534 aagaaagtca ttagtgtata attaattaag ttttaattat tataaatttg ataaatggat 31200
2535 atatatgata tttttaaagta agttctataa tataaagttt ttgcacggaa tgtacatata 31260
2536 gtagttttga taagtgctaa tgataaccga gctaaactct ataatcttaa tcatagaaac 31320
2537 tcatgtgcta ttcagccagt ttagtcctac cacgttcgtt tggagaacaa aggagtgagt 31380
2538 tttttcgtt ttccgcgcgc acgctttccg agctattaaa cggtgcgttt tttacaaaaa 31440
2539 ttttctatag aaaaattact ttaaaaatca tattaatcta tttttgaagt ttaaaaatagt 31500
2540 taatactcaa ttaatcatgc gctaatggct cacatcgttt tacgtatctt cccaatcttc 31560
2541 tcctcactca caaataaaaa accaaaacat gaagttagta tacctcaact aattaggttc 31620
2542 ctgatagtga aacccatcca tccagattta agttttaaaa ttagcacggg tgcttgtatt 31680
2543 tacgagtagt tattctacca accaagttgt agacttgata cagtcgagtt ctacacttcg 31740
2544 catatcttaa gatatgtcgg attagtcttc gaaagtactt atagaggtag ggtgtcttag 31800
2545 acatatatcc gtctagtctt tgaaaatgtt tatagggatg gagtgtgtat atgtgtacat 31860
2546 tcataagagt gagagtacgc gtgtttatat cagctgcgac tgtactatat tttaaaaaaa 31920
2547 ctaatgcatc ctcatctaac gaactaaacc taccagagag gggaggagga atggtaggaa 31980
2548 cactaaaaac cgaaaacttt tagcggaatt aaaagttacc ttcgaagctg atggagatcg 32040
2549 gtctgaccgg cttgattgcc ctagtttgac cgcgccttgt tgccaatcta accggtgtag 32100
2550 atcgaggtct gaccgccctt cgcgccatcg acgcttgttg ccgccatata actgccggtg 32160
2551 tgaccgagca gttgcctctg gtctgatcgc tggtgatcta tcggtgtgat cgttgcattt 32220
2552 gagcaaaaca caaattaaaa gatgtcttga aagtacgtag attgaatttt attgcttata 32280
2553 ttcgtgttac aaagtacaac aacaacactt ctctcacaaa attcgactaa actcgaaacc 32340
2554 ttaacttttc tctaaattaa actctcccaa aatcaataca aggatatctc aactccctct 32400
2555 ctatttatac ccaaggcaag cagcctaagt cacgaatcta atttgtacaa gaagttctaa 32460
2556 ttcactagaa aaccttcccg tacaagaaac aaacttatct catcataatt cgaatttcaa 32520
2557 tcctcccaaa tttagactcc ttccaagttt gactccgctt ttcatacgca cacaatctcc 32580
2558 cattgaaacg gtcaattagg cctagagggg gggtgaatgg gctaatttaa aaacttaagt 32640
2559 aaatgcagaa gcaggttttt tcagaaattc tgaaatgct ttacgaaaat tctgaaaatc 32700
2560 acagaatatg cacaagtgaa agtaaattct agatctagct acatacaaca atgaaatata 32760
2561 agcacaaaca acaactagac ttataacggt acaaacaagc aaagctagag gagggagaga 32820
2562 ggtatatcac cgaggttgtt gcaataagag ttgttcccga agtttgaatc cttaagggga 32880
2563 ttatactttc cgttgaggag ctcacaacga gctgggtctt tgctaaccct tttctcaagg 32940
2564 ggttgcccaa agcactcctc cttccactag tggtatctag gggtaaaaac aattggaaac 33000
2565 gatcggaatc gttagcatct cttcggaaac gatgctcgat cggctggtta gtcctcacat 33060
2566 atactcaaac gaaaatgtta gtcctctcta atcatattgt tattaatcac taaaatcatt 33120
2567 aggggcctag atgcactttc acccatttta tgcgacaaag aatcatcata aaacaatgtg 33180
2568 cattgttctt tagactaagc atcccgtatg atattctgat tgtccagaca tcatcttctc 33240
2569 ccaagttgac tctcgatcca tcaccgacaa cgctctcctg aggcatcaag acacacttac 33300
2570 acaggaatca aaacaagaaa ccatatccga gcacaagttc tttcctaact tgactcgaca 33360
2571 ttagcaaaca acaatattac acacatatag aaataatcta gaagtcataa ttatgagata 33420
```

```
2572 aacacgagta tccaaataaa caactcaaaa ccaaccctaa tcaagatcca gccggtcttc 33480
2573 ctgcacatac cacaccggtc tgcccggcct tactggtaca gtctgatcga cttcacacaa 33540
2574 aaaaaacact tcaccaataa tcaccaaata ctaaattaat tatatatcat gccaattgtt 33600
2575 catcacaaat taataataaa aacacacttt gatttcaaca attagttaac tgacagtcat 33660
2576 atcgatatat agcaaatatc ggcaataatt gcacaagctc cctacatcta ttctcttagg 33720
2577 ttctcctaga tcgatcacac tggtctactc ctttcatccc ataaaataca aacgttatcc 33780
2578 caaatgttag acaccgtaat actacaaatc tggagaggcg tgattaataa tttctcatca 33840
2579 accatagggg taataataat ccaaggctgt gtttagttcc acgtaaaaat tgaaagtttg 33900
2580 aagaaattgg aacgatgtga agaaaaagtt agaagtttgt gtgtgtaaaa aagttcaatg 33960
2581 tgacgaaaaa gttgaaattt tgaagaaaaa agtttgacta aacaaggctt agtcatggtg 34020
2582 atggtaagtc agcccctaag cttttcacttt gacctattct actctcacac tgacgttgac 34080
2583 attgtatcac agggcaccac ccatcccctc cttaattttt gtttgactat agtaaccata 34140
2584 tcaatcaaat aggtgtgaaa gctaacctag attatttctg atcacactga tcacattctc 34200
2585 actagctatt ctacactttc taccttcaca taggacgaca agtgtaccaa cctactgata 34260
2586 aattatcaag cctcatttt cttataagtt atggccaaaa ttaaaatttt aaaaattagt 34320
2587 tttaaattat tttgatgttg tttcatcacc tttttctagc tttagctaaa atgatataat 34380
2588 tatagagaaa ataaaagtca taacctaaaa ataaattta gctcattttt tatagcttat 34440
2589 tagccgcaga ctattcaact cgaccctccg tgttttctca tataagccca taccatggct 34500
2590 acgtttgaaa ctacaactct acaagttctc atattttatt ttcttatttt tcacaagtac 34560
2591 gttttttgaaa ctgtaaaacg acgtgtgttt ctaaaatttt ctatagaaaa attactttaa 34620
2592 aacatcatat aaatttattt taattttttt aactaatact acctctatcc tagaaagact 34680
2593 gcagttttgc actattcata tccaacgttt gaccgtccgt tttatttgaa agttttttat 34740
2594 aattagtatt tttattgata ttaaatgata aattatgaat aatactttat gtgtgactat 34800
2595 tttttatttt tttaataaat tttcaaacaa gacggacgtg gttagtattt ttgttgttat 34860
2596 tagatgataa attatgaata atactttatg tgtgactatt ttttttaaat tttttataa 34920
2597 attttcaaat aagacagaca gacaaacgtt gcacaccaaa atttataatt cataactaca 34980
2598 gtcaaaatgg gacggaggta gtaattaatt aaccttgtgc taataaacct cttttttgtag 35040
2599 aagaaatgag aagttcgaac acaacccgca cacccaaacc aagggggtgt ttagattgag 35100
2600 gggtgtaaag ttttggcgtg tcacattgga tattatatat gatgttgcat agggtgttcg 35160
2601 gacactaata aaaaaaatct aattacataa tccgtcagta aaccgtgaga cggacttatt 35220
2602 aagcctaatt aatccgtcat tagcacatgt ttactgtaac accgtattat caaatcatgt 35280
2603 agcaattagg cttaaaaaat tcgactcgca aattagtaac aatttataca attagctatt 35340
2604 ttttagccta tatttaatat attatacaga tgtccaaact ttcaacacga tctaaaattt 35400
2605 tcgggtaggc tcatcgaaag caaacaaaac gaaccccgc acacgaacgg tcacacgctg 35460
2606 atctttttatc caaacccaaa aaagaaaaga aaatcagaaa aagtcccgcc actacctcta 35520
2607 ctactgccgg ccctacccc acagattcca ggcgccagct aagcacacac cgacgtgcac 35580
2608 ccctcccctc ccgcatgcgt ttccactctg tctccgctcc acccgagc ccggtcaaac 35640
2609 ccaacccgc cgcgccgtca ctccgcaccc gactcactgg cccccaccac ccaccaccgc 35700
2610 cgctgccccg tgggccccgc ccccacccgc cgacgcgtgg gcccccacac gccgccggcc 35760
2611 gcggcgggtc acatgcgcgt agtccaaact ccgaggcgcg cacgaaaaag agagagacaa 35820
2612 aaaaaaaga aagagaaat tctttttagg cgctctaggt ataaaaatct actcctactc 35880
2613 atcacctact tttccacttc gattcctctc cccttccccc tcctcttcct cctccgcttc 35940
2614 ctccctctcc tctcctctcc tctccgccgc tgccgctgct gctgcgtgct cctctcatcc 36000
2615 ccgtctcttc ccctccgcg cgccgcccac tcgctgggag gaggaggaag aggagacctt 36060
2616 ccccggaatt cgtgctcgcc ggatcgggct cgccgcaatc catgtcggtg agtggtgctg 36120
2617 ttgatgtgtt tcttttttct actgatttta gagttggtga ttggttgcgc tgtctagatc 36180
2618 gagctgaccc gcctgcgcgt tggattgtat tgattagagg aagggaggct gattagcacg 36240
2619 aggtgtggga aaaattagtt gtaaaaaaaa ttggaggggt taatagatgg gcgtttgtta 36300
2620 agtgacgtaa ggcgaaagtg atgttatgct gttctgggtt agtaaggttc ttggcaatca 36360
```

```
2621 gttttggtca aatcttactg gttcataggt gttttggtcg aatttcagct tcagatgaag 36420
2622 tttgtccctc gtttccagga ttattggcgg tcagttcttc atcgttaggc ttttaattgg 36480
2623 ttgaacagga aattggggtc atggtagaat gcgaagtttc tgaaaacata agtagagaac 36540
2624 aaaagtagga gaattttgtc aattaggtac gatggaaggt caccgtcagc ttgttcaact 36600
2625 actgttaggt tcaaactttg atcgtgcttg agatttcttt gctaaaataa ggggatatgt 36660
2626 ggcaaaggga gaataaacca tgatatgatt tttgttactg actatagtgg ctgtaaatga 36720
2627 gaacttgtgg aatcacagaa agttccaaaa aacaatgcag aaattgtatc ctttttttgtg 36780
2628 ctttgcctag tccattttct gacttctgag atgaggtccc cgcatcacat agaactgcaa 36840
2629 ttgcaattca atgcattcat gcaacaaaca gacagactac tgtcctataa catgagttat 36900
2630 gacttacgag tagccttgca tattgtacat gcataagcca aagctgcttg tttattgtaa 36960
2631 accagatgct ctgtaccata aaaaccataa tccattaagt tttcttgttt actttgttga 37020
2632 acattatact agatacctat ggtgttgact gttacataac attctgttca ccatttggca 37080
2633 attttccccc cttagtgaca ttcattcttt tgagatttca gtcatgcctt ccacatgaca 37140
2634 aaatgttcca ttcaactatg atgtttggaa ttgggaaacg gtacacatac ttaatgtttc 37200
2635 ttttactaat tctgattgaa agaatgcaac acatctttta atccacatgt acatacatca 37260
2636 atcaatgctt tggagagagt gcatcatgga tcaatcatat tgatggtttt tagtaaacat 37320
2637 tttacagcaa ttatttgtgc acatggccct catacaattt ttgttgggca ttcaacccctt 37380
2638 gttttgaggt gttaaataaa ttattttta ttatgttgtc aaattgcctg acctttgtat 37440
2639 tggtggttgg gcatctagct gtgcactgtc aataactcct ggcggtgctc ctctttttcc 37500
2640 tggctgttga acttccaatc tgaccattca ttatgttcat atcttgtaca catgtggtga 37560
2641 gatgtcaatt gctgtccatt gtatgttact atattttact tagcattgtt caactgtaat 37620
2642 agacagtgat atatcataca tgtcaaatga aaccaacaca gacaaagcat atgctgtgtt 37680
2643 gtcatcttct tatttcttgt actgttctgt tctgtcttga aggttagctg tgttagtcat 37740
2644 ggcccactat ggattctcaa aaggcatcct ttatgttcat tagtttcatc tttttctatt 37800
2645 ttccaatttt attagatggc tatactcgac tttgttcaca cataatctct aattatcaat 37860
2646 cgtctggtca tgcttggcag gcctcaatca aatgccagcc cacccacggg aaatgggcca 37920
2647 ggattgaggc ctgctgaaca aggtgtagag gtagatacac cctttaatgt ggatcatggt 37980
2648 tcctttctag gaggaagcag gtcgtccctt gcccaagttt ggtgaatggg atgtcaacga 38040
2649 cccagcgtcc gctgatggat tcacagtgat attcaacaaa gccagagatg agaaaaaggg 38100
2650 tgggaatggg caagatactg attcaccctg caaagaaact aggactgaga gggtggaatc 38160
2651 atatgcccccc aagacaaact cggtatgtct attacattac tcacgcttat tataatatca 38220
2652 gaatttcaat ttctcccctga ttaatataac gatattcctt ttctcttgaa ctacataact 38280
2653 agctagatgt cattaatctc attgtttttca tgtgcagaag aaatggtttt gctgcgtgac 38340
2654 atccagtcct acacaatctt gatgaaaacg agttccatgg gttgcaaaat tactatcctt 38400
2655 taattttgct atatacatac tatccataag accttgtaga gatgcccaga ctctactgcg 38460
2656 gtgctagatt gggcatctct taaaactttg aggtgtgtgt atgtatgtgt gagggttatc 38520
2657 agatgcacat tcggataaat gaacttctga ttgtaattct agccttccgt cctgtgacat 38580
2658 tctgtgatgt agtcgttatt cagtgatata atgaatctca cctatttata taactgcaca 38640
2659 ctgtttctct tgctttccga ggaaacaaac actgttttac caaagttggc tgtgctccaa 38700
2660 aagaggatta aattccatat gattctcata ttgcaattgc aattttgatt ctctcaccta 38760
2661 ctaatatgcg attttggaat tttcctcacg tgccaaattt gcatattgca attttgataa 38820
2662 aggatacaag cacagtatag ctcaatctcc ttggcgatgg aagtttttctt aatattgtag 38880
2663 gcaccacatt tctagctgat aatgcaacta tcgtggagat cataaagagg aggaattttg 38940
2664 tggaagaagg acctggaggt tgggagtctt cggcctctac tcagtcaaat acaagaaaat 39000
2665 attcctcaaa acttaatgca tgtgatgtag attcaaaaag aggtgaatca actagctgat 39060
2666 aaggtagcaa aggatgtgag atcgcgacag ctaaatcctt caggtttatg attgtcaaaa 39120
2667 tatcttgagt cttgctcatc ctagaaacct ttgttatgtt agagatttga agaaccattt 39180
2668 cagagcaacg aattgtatta caactttaca agtcatgtgc tctgtttctg aaatggaaat 39240
2669 aaaactgatg agttctaaaa aaaaaagatc catacattca tgcctgtaca cggacagcaa 39300
```

```
2670 atctacatgt caaagtggat atcgccaaat tggtttcaga atttcatcat tgtgctcatg 39360
2671 cccaatattt tttaattttc ggtgaggaac agatgagcat ctttcgtgct agctgcagac 39420
2672 tcgggtgcac taggaatttc actggtttat ttcacacgat ttatttcagt tccactgaaa 39480
2673 tttgtttgga attcatttgg ttcgagaaga ggcgtgagat acgagacttt gggagaggga 39540
2674 aagggcagtt caatacctga tacttttgct cacttggagc ttgaccggag agaggggagg 39600
2675 gagagtagtg agggggggagc agtcgatggc ggcggagacg gtggtgagca tggcgatgtc 39660
2676 ggtgctgggc agcgccgtcg ggaaggccgc ctccgccgcc gccgacgagg ccaccctcct 39720
2677 gctcggcatc cagaaggaga tctggtatgt gtgcgcacgc ttctgtaact ccataccaca 39780
2678 tcggtgactc tccatggccc ctccgcggcg gcgtgtcggc gacctcggct tccatggccg 39840
2679 ccgccgccgc cgcctcacag ccctgcttcg ccgcaatttc ttttttggtc ttttggtgat 39900
2680 tccaacggat tcaggatcaa aaatgaaaca atccggagag cctattcacg cttcgcattt 39960
2681 cactaccccca aacttgtgga ttgtgaccat gcaaaccaaa attccttcag tttcatactt 40020
2682 tcatatgctc aaatttccgt tgtttttcata gaaacaaggt tatttatccc acttacatct 40080
2683 tgcaaaaacc aaagtacagt tactcttatc gattttcatc tatacacatg ctagacgaat 40140
2684 gcattgtagt ccaattcaaa tttctgatat attagttact aaccaagatg ctcccatgcc 40200
2685 atgagcgcaa gttccattga caaggaaaaa cactttttta tgatttgagc aagttccacg 40260
2686 ctggcgtcct cgttggcaca ccacgtaagc taaagtggca aaaaaaaaaa gaattttttct 40320
2687 ctctacagtg agtcagtgac aaaaacttaa gtgcaaaatt aaaatgggta tttggataat 40380
2688 cgccaaatct aaaagtggca aatagttaaa ttccccttttt atatttctct cttcagtggc 40440
2689 aaaaacttaa gtgcaaaact aaaatgggta tttggataat cgccaaatct aacagtggca 40500
2690 aaaagttaaa ttcccctttt atattagtcc ttgaggagct acggcaatgt ttgctagcac 40560
2691 cggacaagat catccaataa aaacttagag attatacata acagtgtcac tgttactagc 40620
2692 aaaattttcc atcctattgc atggttagta catttttttt ttgtgagaaa tatatggtca 40680
2693 atgccatttg caatatacct ccaggctcta gtcaatataa gactacatac atatgcgatc 40740
2694 tacattttgt actaggtctc taccaaaaga aggggtttgt atccttctgt tctcttaaat 40800
2695 taatgagacg atttgtagga tctttctttt tcaagggatt gtgggagttc tgactctcat 40860
2696 ggctaacgag gcgctctgaa tactagtagt ttatttccat ccatctattt atttatttta 40920
2697 ataaatttta ttgcttttga atttatattt gtaggtacat caaggacgag ctgaaaacta 40980
2698 ttcaggcatt cttaagagct gctgaagtaa caaagaagaa agatgacttg ctaaaggtat 41040
2699 gggcagagca agtacgagat ctgtcatata acattgaaga ttgcctagac gaattcaagg 41100
2700 ttcatgttga gagccaaagc ttggcaaagc aactaatgaa gcttggtgaa cgccatcgaa 41160
2701 ttgctgtaca gattcgcaac ttaaaatcaa gaattgaaga agtgagcaac aggaatacac 41220
2702 gctacagctt aatcaagccc atttcctcta taaccacaga ggatgagagg gattcctacc 41280
2703 tagaagatgc tcgcaatcga tcaggtagca acactgacga gtcagaactt gtgggctttg 41340
2704 ccaagactaa agatgagttg cttaaactga tagatgtcaa tactaatgac ggtccagcta 41400
2705 aagtgatatg tgtggttggt atgggtggat taggcaagac taccccttgca aggaaggcat 41460
2706 atgaaaacaa ggaacacatg aagaacttct cgtgttgtgc ttggatcact gtgtctcagt 41520
2707 catttgacag gaaagaaatt ctgaaacaaa tgatcaggca acttctgggt gctgattcat 41580
2708 tagacaaact cttgaaagaa tttagtgaga agttgctcgt gcaagtccag catctcgctg 41640
2709 atcacttggt tgaagggcta aaggagaaaa ggtactttgt tgtccttgat gacctatgga 41700
2710 ccatagatgc atggaattgg attcatgata ttgcttttcc gaagattaac aacagaggta 41760
2711 gtcgcataat aataacaacg cgagatgctg gcttagctgg aaggtgtacc tctgaatcac 41820
2712 ttatttacca ccttgaaccg ttacatatag atgatgctat acacttgcta ctagcaaaga 41880
2713 caaacataag acttgaagac atggaaaatg atgaggactt gggcagcata gttacaaaat 41940
2714 tggtgaaaag gtgtggttat ttaccgctgg ctatactcac aataggaggc attcttgcta 42000
2715 ctaagaagat aatggagtgg ggaaaatttt acagagaact tccttcagag cttgagagca 42060
2716 atccaagcct agaagccatg aggaggatgg tgaccctaag ctacaatcac ttaccatctc 42120
2717 atcttaaacc atgctttctt tacctaagta ttttccctga agattttgaa attcaaagag 42180
2718 ggcgcctggt agatagatgg atagcagagg gttttgtcag agccacagat ggggtgaaca 42240
```

RAW SEQUENCE LISTING   DATE: 09/22/2003
PATENT APPLICATION: US/10/656,394   TIME: 13:54:45

Input Set : A:\pto.pg.TXT
Output Set: N:\CRF4\09222003\J656394.raw

```
   2719 ttgaggatgt tggaaatagt cactttaatg agcttatcaa cagaagtctg attcagccct 42300
   2720 caaaagttag tacagatgga gttgttaaga gatgtcgaat ccatgatatc atgcgtgata 42360
   2721 tcatagtttc aatttctaga gaggaaaatt ttgtgctgtt gactagggag aagatcactg 42420
   2722 ttgtagcgga ggagagcatc cgccatctag catttcatgg gagcaaatgc tcaaagatat 42480
   2723 gcttggagtg gaaccatctg cgctcagtaa ctttgtttgg cgacagacct gtggggcgaa 42540
   2724 cacctgcact ttgttcacca caatttagga tgctgagagt gttggatctg gaagatgcaa 42600
   2725 aattcaaatt cacacaaaat gatatcagaa atatagggtt gttgcgccac atgaaatatt 42660
   2726 tgaattttgc aagagcctca actatttata cacttccaag gtccatagga aaattgcagt 42720
   2727 gcttgcaaat tttgaacatg agggaggcaa atatctcagc actaacaact gaggtgacta 42780
   2728 aactccagaa tctccgtagc ctccgatgca gcaggaggtc tggttctggt tactttagca 42840
   2729 taatagataa tcccaaggaa tgcttgatga tcaccatgtg cttaccgatg gtttttcttaa 42900
   2730 cttcaataaa tttcagtgac cgtgtgaagt taattcctga gatatgcatg tcatgttcta 42960
E--> 2731 cccgttggtc tgatacaaag ggtgtgaggg ─Continue on page 19
E--> 2732                          SEQUENCE LISTING
W--> 2734 <110> APPLICANT: Wang
W--> 2734 <110> APPLICANT: Wang
W--> 2736 <120> TITLE OF INVENTION: Cloning and Characterization of the
W--> 2736 <120> TITLE OF INVENTION: Cloning and Characterization of the
W--> 2737       Broad-Spectrum Resistance Gene Pi2
W--> 2740 <130> FILE REFERENCE: 035718/268948
W--> 2740 <130> FILE REFERENCE: 035718/268948
W--> 2742 <150> PRIOR APPLICATION NUMBER: 60/455,713
W--> 2743 <151> PRIOR FILING DATE: 2003-03-18
W--> 2745 <150> PRIOR APPLICATION NUMBER: 60/409,216
W--> 2747 SEQUENCE LISTING
W--> 2749 <110> APPLICANT: Wang
W--> 2749 <110> APPLICANT: Wang
W--> 2751 <120> TITLE OF INVENTION: Cloning and Characterization of the
W--> 2751 <120> TITLE OF INVENTION: Cloning and Characterization of the
W--> 2752       Broad-Spectrum Resistance Gene Pi2
W--> 2755 <130> FILE REFERENCE: 035718/268948
W--> 2755 <130> FILE REFERENCE: 035718/268948
W--> 2757 <150> PRIOR APPLICATION NUMBER: 60/455,713
W--> 2758 <151> PRIOR FILING DATE: 2003-03-18
W--> 2760 <150> PRIOR APPLICATION NUMBER: 60/409,216
W--> 2762 SEQUENCE LISTING
W--> 2764 <110> APPLICANT: Wang
W--> 2764 <110> APPLICANT: Wang
W--> 2766 <120> TITLE OF INVENTION: Cloning and Characterization of the
W--> 2766 <120> TITLE OF INVENTION: Cloning and Characterization of the
W--> 2767       Broad-Spectrum Resistance Gene Pi2
W--> 2770 <130> FILE REFERENCE: 035718/268948
W--> 2770 <130> FILE REFERENCE: 035718/268948
W--> 2772 <150> PRIOR APPLICATION NUMBER: 60/455,713
W--> 2773 <151> PRIOR FILING DATE: 2003-03-18
W--> 2775 <150> PRIOR APPLICATION NUMBER: 60/409,216
W--> 2777 SEQUENCE LISTING
W--> 2779 <110> APPLICANT: Wang
W--> 2779 <110> APPLICANT: Wang
```

Sequence Listing found in the middle of seq 13.
Please delete this sequence list. found on p. 16-19

```
W--> 2781 <120> TITLE OF INVENTION: Cloning and Characterization of the
W--> 2781 <120> TITLE OF INVENTION: Cloning and Characterization of the
W--> 2782       Broad-Spectrum Resistance Gene Pi2
W--> 2785 <130> FILE REFERENCE: 035718/268948
W--> 2785 <130> FILE REFERENCE: 035718/268948
W--> 2787 <150> PRIOR APPLICATION NUMBER: 60/455,713
W--> 2788 <151> PRIOR FILING DATE: 2003-03-18
W--> 2790 <150> PRIOR APPLICATION NUMBER: 60/409,216
W--> 2792 SEQUENCE LISTING
W--> 2794 <110> APPLICANT: Wang
W--> 2794 <110> APPLICANT: Wang
W--> 2796 <120> TITLE OF INVENTION: Cloning and Characterization of the
W--> 2796 <120> TITLE OF INVENTION: Cloning and Characterization of the
W--> 2797       Broad-Spectrum Resistance Gene Pi2
W--> 2800 <130> FILE REFERENCE: 035718/268948
W--> 2800 <130> FILE REFERENCE: 035718/268948
W--> 2802 <150> PRIOR APPLICATION NUMBER: 60/455,713
W--> 2803 <151> PRIOR FILING DATE: 2003-03-18
W--> 2805 <150> PRIOR APPLICATION NUMBER: 60/409,216
W--> 2807 SEQUENCE LISTING
W--> 2809 <110> APPLICANT: Wang
W--> 2809 <110> APPLICANT: Wang
W--> 2811 <120> TITLE OF INVENTION: Cloning and Characterization of the
W--> 2811 <120> TITLE OF INVENTION: Cloning and Characterization of the
W--> 2812       Broad-Spectrum Resistance Gene Pi2
W--> 2815 <130> FILE REFERENCE: 035718/268948
W--> 2815 <130> FILE REFERENCE: 035718/268948
W--> 2817 <150> PRIOR APPLICATION NUMBER: 60/455,713
W--> 2818 <151> PRIOR FILING DATE: 2003-03-18
W--> 2820 <150> PRIOR APPLICATION NUMBER: 60/409,216
W--> 2822 SEQUENCE LISTING
W--> 2824 <110> APPLICANT: Wang
W--> 2824 <110> APPLICANT: Wang
W--> 2826 <120> TITLE OF INVENTION: Cloning and Characterization of the
W--> 2826 <120> TITLE OF INVENTION: Cloning and Characterization of the
W--> 2827       Broad-Spectrum Resistance Gene Pi2
W--> 2830 <130> FILE REFERENCE: 035718/268948
W--> 2830 <130> FILE REFERENCE: 035718/268948
W--> 2832 <150> PRIOR APPLICATION NUMBER: 60/455,713
W--> 2833 <151> PRIOR FILING DATE: 2003-03-18
W--> 2835 <150> PRIOR APPLICATION NUMBER: 60/409,216
W--> 2837 SEQUENCE LISTING
W--> 2839 <110> APPLICANT: Wang
W--> 2839 <110> APPLICANT: Wang
W--> 2841 <120> TITLE OF INVENTION: Cloning and Characterization of the
W--> 2841 <120> TITLE OF INVENTION: Cloning and Characterization of the
W--> 2842       Broad-Spectrum Resistance Gene Pi2
W--> 2845 <130> FILE REFERENCE: 035718/268948
W--> 2845 <130> FILE REFERENCE: 035718/268948
```

```
W--> 2847 <150> PRIOR APPLICATION NUMBER: 60/455,713
W--> 2848 <151> PRIOR FILING DATE: 2003-03-18
W--> 2850 <150> PRIOR APPLICATION NUMBER: 60/409,216
W--> 2852 SEQUENCE LISTING
W--> 2854 <110> APPLICANT: Wang
W--> 2854 <110> APPLICANT: Wang
W--> 2856 <120> TITLE OF INVENTION: Cloning and Characterization of the
W--> 2856 <120> TITLE OF INVENTION: Cloning and Characterization of the
W--> 2857       Broad-Spectrum Resistance Gene Pi2
W--> 2860 <130> FILE REFERENCE: 035718/268948
W--> 2860 <130> FILE REFERENCE: 035718/268948
W--> 2862 <150> PRIOR APPLICATION NUMBER: 60/455,713
W--> 2863 <151> PRIOR FILING DATE: 2003-03-18
W--> 2865 <150> PRIOR APPLICATION NUMBER: 60/409,216
W--> 2867 SEQUENCE LISTING
W--> 2869 <110> APPLICANT: Wang
W--> 2869 <110> APPLICANT: Wang
W--> 2871 <120> TITLE OF INVENTION: Cloning and Characterization of the
W--> 2871 <120> TITLE OF INVENTION: Cloning and Characterization of the
W--> 2872       Broad-Spectrum Resistance Gene Pi2
W--> 2875 <130> FILE REFERENCE: 035718/268948
W--> 2875 <130> FILE REFERENCE: 035718/268948
W--> 2877 <150> PRIOR APPLICATION NUMBER: 60/455,713
W--> 2878 <151> PRIOR FILING DATE: 2003-03-18
W--> 2880 <150> PRIOR APPLICATION NUMBER: 60/409,216
W--> 2882 SEQUENCE LISTING
W--> 2884 <110> APPLICANT: Wang
W--> 2884 <110> APPLICANT: Wang
W--> 2886 <120> TITLE OF INVENTION: Cloning and Characterization of the
W--> 2886 <120> TITLE OF INVENTION: Cloning and Characterization of the
W--> 2887       Broad-Spectrum Resistance Gene Pi2
W--> 2890 <130> FILE REFERENCE: 035718/268948
W--> 2890 <130> FILE REFERENCE: 035718/268948
W--> 2892 <150> PRIOR APPLICATION NUMBER: 60/455,713
W--> 2893 <151> PRIOR FILING DATE: 2003-03-18
W--> 2895 <150> PRIOR APPLICATION NUMBER: 60/409,216
W--> 2897 SEQUENCE LISTING
W--> 2899 <110> APPLICANT: Wang
W--> 2899 <110> APPLICANT: Wang
W--> 2901 <120> TITLE OF INVENTION: Cloning and Characterization of the
W--> 2901 <120> TITLE OF INVENTION: Cloning and Characterization of the
W--> 2902       Broad-Spectrum Resistance Gene Pi2
W--> 2905 <130> FILE REFERENCE: 035718/268948
W--> 2905 <130> FILE REFERENCE: 035718/268948
W--> 2907 <150> PRIOR APPLICATION NUMBER: 60/455,713
W--> 2908 <151> PRIOR FILING DATE: 2003-03-18
W--> 2910 <150> PRIOR APPLICATION NUMBER: 60/409,216
W--> 2912 SEQUENCE LISTING
W--> 2914 <110> APPLICANT: Wang
```

```
                    RAW SEQUENCE LISTING            DATE: 09/22/2003
                    PATENT APPLICATION:  US/10/656,394    TIME: 13:54:45

                    Input Set : A:\pto.pg.TXT
                    Output Set: N:\CRF4\09222003\J656394.raw

W--> 2914 <110> APPLICANT: Wang
W--> 2916 <120> TITLE OF INVENTION: Cloning and Characterization of the
W--> 2916 <120> TITLE OF INVENTION: Cloning and Characterization of the
W--> 2917        Broad-Spectrum Resistance Gene Pi2
W--> 2920 <130> FILE REFERENCE: 035718/268948
W--> 2920 <130> FILE REFERENCE: 035718/268948
W--> 2922 <150> PRIOR APPLICATION NUMBER: 60/455,713
W--> 2923 <151> PRIOR FILING DATE: 2003-03-18
W--> 2925 <150> PRIOR APPLICATION NUMBER: 60/409,216
W--> 2927 SEQUENCE LISTING
W--> 2929 <110> APPLICANT: Wang
W--> 2929 <110> APPLICANT: Wang
W--> 2931 <120> TITLE OF INVENTION: Cloning and Characterization of the
W--> 2931 <120> TITLE OF INVENTION: Cloning and Characterization of the
W--> 2932        Broad-Spectrum Resistance Gene Pi2
W--> 2935 <130> FILE REFERENCE: 035718/268948
W--> 2935 <130> FILE REFERENCE: 035718/268948
W--> 2937 <150> PRIOR APPLICATION NUMBER: 60/455,713
W--> 2938 <151> PRIOR FILING DATE: 2003-03-18
W--> 2940 <150> PRIOR APPLICATION NUMBER: 60/409,216
W--> 2942 SEQUENCE LISTING
W--> 2944 <110> APPLICANT: Wang
W--> 2944 <110> APPLICANT: Wang
W--> 2946 <120> TITLE OF INVENTION: Cloning and Characterization of the
W--> 2946 <120> TITLE OF INVENTION: Cloning and Characterization of the
W--> 2947        Broad-Spectrum Resistance Gene Pi2
W--> 2950 <130> FILE REFERENCE: 035718/268948
W--> 2950 <130> FILE REFERENCE: 035718/268948
W--> 2952 <150> PRIOR APPLICATION NUMBER: 60/455,713
W--> 2953 <151> PRIOR FILING DATE: 2003-03-18
W--> 2955 <150> PRIOR APPLICATION NUMBER: 60/409,216
W--> 2957 SEQUENCE LISTING
W--> 2959 <110> APPLICANT: Wang
W--> 2959 <110> APPLICANT: Wang
W--> 2961 <120> TITLE OF INVENTION: Cloning and Characterization of the
W--> 2961 <120> TITLE OF INVENTION: Cloning and Characterization of the
W--> 2962        Broad-Spectrum Resistance Gene Pi2
W--> 2965 <130> FILE REFERENCE: 035718/268948
W--> 2965 <130> FILE REFERENCE: 035718/268948
W--> 2967 <150> PRIOR APPLICATION NUMBER: 60/455,713
W--> 2968 <151> PRIOR FILING DATE: 2003-03-18
W--> 2970 <150> PRIOR APPLICATION NUMBER: 60/409,216
E--> 2971 <210> SEQ ID NO:
E--> 2971 <211> LENGTH:
E--> 2971 <212> TYPE:
E--> 2971 <213> ORGANISM:
E--> 2971 <400> SEQUENCE:
     2971 atg aaaaattttc aaaaaaaata 46380  —Dcont. of page 16 (length short)
     2972 acatgatagg ttaacatgta atatatcatc ttataaatat gcaagttcaa atttgatttc 46440
```

VERIFICATION SUMMARY   DATE: 09/22/2003
PATENT APPLICATION: **US/10/656,394**   TIME: 13:54:46

Input Set : **A:\pto.pg.TXT**
Output Set: **N:\CRF4\09222003\J656394.raw**

```
L:12 M:270 C: Current Application Number differs, Replaced Current Application No
L:12 M:271 C: Current Filing Date differs, Replaced Current Filing Date
L:2401 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:13 after pos.:23160
L:2731 M:254 E: No. of Bases conflict, LENGTH:Input:0 Counted:42990 SEQ:13
L:2732 M:334 W: ·(2) Invalid Amino Acid in Coding Region, NUMBER OF INVALID KEYS:2
L:2732 M:252 E: No. of Seq. differs, <211> LENGTH:Input:99090 Found:42990 SEQ:13
L:2734 M:280 W: Numeric Identifier already exists, <110> found multiple times
L:2734 M:281 W: Numeric Fields not Ordered, <110> not ordered!.
L:2736 M:280 W: Numeric Identifier already exists, <120> found multiple times
L:2736 M:281 W: Numeric Fields not Ordered, <120> not ordered!.
L:2740 M:280 W: Numeric Identifier already exists, <130> found multiple times
L:2740 M:281 W: Numeric Fields not Ordered, <130> not ordered!.
L:2742 M:281 W: Numeric Fields not Ordered, <150> not ordered!.
L:2743 M:281 W: Numeric Fields not Ordered, <151> not ordered!.
L:2745 M:281 W: Numeric Fields not Ordered, <150> not ordered!.
L:2747 M:259 W: Allowed number of lines exceeded, <150> PRIOR APPLICATION NUMBER:
L:2749 M:280 W: Numeric Identifier already exists, <110> found multiple times
L:2749 M:281 W: Numeric Fields not Ordered, <110> not ordered!.
L:2751 M:280 W: Numeric Identifier already exists, <120> found multiple times
L:2751 M:281 W: Numeric Fields not Ordered, <120> not ordered!.
L:2755 M:280 W: Numeric Identifier already exists, <130> found multiple times
L:2755 M:281 W: Numeric Fields not Ordered, <130> not ordered!.
L:2757 M:289 W: Identifier Missing or Out-Of-Order, <150> PRIOR APP FILING DATE
L:2758 M:281 W: Numeric Fields not Ordered, <151> not ordered!.
L:2760 M:281 W: Numeric Fields not Ordered, <150> not ordered!.
L:2762 M:259 W: Allowed number of lines exceeded, <150> PRIOR APPLICATION NUMBER:
L:2764 M:280 W: Numeric Identifier already exists, <110> found multiple times
L:2764 M:281 W: Numeric Fields not Ordered, <110> not ordered!.
L:2766 M:280 W: Numeric Identifier already exists, <120> found multiple times
L:2766 M:281 W: Numeric Fields not Ordered, <120> not ordered!.
L:2770 M:280 W: Numeric Identifier already exists, <130> found multiple times
L:2770 M:281 W: Numeric Fields not Ordered, <130> not ordered!.
L:2772 M:289 W: Identifier Missing or Out-Of-Order, <150> PRIOR APP FILING DATE
L:2773 M:281 W: Numeric Fields not Ordered, <151> not ordered!.
L:2775 M:281 W: Numeric Fields not Ordered, <150> not ordered!.
L:2777 M:259 W: Allowed number of lines exceeded, <150> PRIOR APPLICATION NUMBER:
L:2779 M:280 W: Numeric Identifier already exists, <110> found multiple times
L:2779 M:281 W: Numeric Fields not Ordered, <110> not ordered!.
L:2781 M:280 W: Numeric Identifier already exists, <120> found multiple times
L:2781 M:281 W: Numeric Fields not Ordered, <120> not ordered!.
L:2785 M:280 W: Numeric Identifier already exists, <130> found multiple times
L:2785 M:281 W: Numeric Fields not Ordered, <130> not ordered!.
L:2787 M:289 W: Identifier Missing or Out-Of-Order, <150> PRIOR APP FILING DATE
L:2788 M:281 W: Numeric Fields not Ordered, <151> not ordered!.
L:2790 M:281 W: Numeric Fields not Ordered, <150> not ordered!.
L:2792 M:259 W: Allowed number of lines exceeded, <150> PRIOR APPLICATION NUMBER:
L:2794 M:280 W: Numeric Identifier already exists, <110> found multiple times
L:2794 M:281 W: Numeric Fields not Ordered, <110> not ordered!.
```

VERIFICATION SUMMARY   DATE: 09/22/2003
PATENT APPLICATION: US/10/656,394   TIME: 13:54:46

Input Set : **A:\pto.pg.TXT**
Output Set: **N:\CRF4\09222003\J656394.raw**

```
L:2796 M:280 W: Numeric Identifier already exists, <120> found multiple times
L:2796 M:281 W: Numeric Fields not Ordered, <120> not ordered!.
L:2800 M:280 W: Numeric Identifier already exists, <130> found multiple times
L:2800 M:281 W: Numeric Fields not Ordered, <130> not ordered!.
L:2802 M:289 W: Identifier Missing or Out-Of-Order, <150> PRIOR APP FILING DATE
L:2803 M:281 W: Numeric Fields not Ordered, <151> not ordered!.
L:2805 M:281 W: Numeric Fields not Ordered, <150> not ordered!.
L:2807 M:259 W: Allowed number of lines exceeded, <150> PRIOR APPLICATION NUMBER:
L:2809 M:280 W: Numeric Identifier already exists, <110> found multiple times
L:2809 M:281 W: Numeric Fields not Ordered, <110> not ordered!.
L:2811 M:280 W: Numeric Identifier already exists, <120> found multiple times
L:2811 M:281 W: Numeric Fields not Ordered, <120> not ordered!.
L:2815 M:280 W: Numeric Identifier already exists, <130> found multiple times
L:2815 M:281 W: Numeric Fields not Ordered, <130> not ordered!.
L:2817 M:289 W: Identifier Missing or Out-Of-Order, <150> PRIOR APP FILING DATE
L:2818 M:281 W: Numeric Fields not Ordered, <151> not ordered!.
L:2820 M:281 W: Numeric Fields not Ordered, <150> not ordered!.
L:2822 M:259 W: Allowed number of lines exceeded, <150> PRIOR APPLICATION NUMBER:
L:2824 M:280 W: Numeric Identifier already exists, <110> found multiple times
L:2824 M:281 W: Numeric Fields not Ordered, <110> not ordered!.
L:2826 M:280 W: Numeric Identifier already exists, <120> found multiple times
L:2826 M:281 W: Numeric Fields not Ordered, <120> not ordered!.
L:2830 M:280 W: Numeric Identifier already exists, <130> found multiple times
L:2830 M:281 W: Numeric Fields not Ordered, <130> not ordered!.
L:2832 M:289 W: Identifier Missing or Out-Of-Order, <150> PRIOR APP FILING DATE
L:2833 M:281 W: Numeric Fields not Ordered, <151> not ordered!.
L:2835 M:281 W: Numeric Fields not Ordered, <150> not ordered!.
L:2837 M:259 W: Allowed number of lines exceeded, <150> PRIOR APPLICATION NUMBER:
L:2839 M:280 W: Numeric Identifier already exists, <110> found multiple times
L:2839 M:281 W: Numeric Fields not Ordered, <110> not ordered!.
L:2841 M:280 W: Numeric Identifier already exists, <120> found multiple times
L:2841 M:281 W: Numeric Fields not Ordered, <120> not ordered!.
L:2845 M:280 W: Numeric Identifier already exists, <130> found multiple times
L:2845 M:281 W: Numeric Fields not Ordered, <130> not ordered!.
L:2847 M:289 W: Identifier Missing or Out-Of-Order, <150> PRIOR APP FILING DATE
L:2848 M:281 W: Numeric Fields not Ordered, <151> not ordered!.
L:2850 M:281 W: Numeric Fields not Ordered, <150> not ordered!.
L:2852 M:259 W: Allowed number of lines exceeded, <150> PRIOR APPLICATION NUMBER:
L:2854 M:280 W: Numeric Identifier already exists, <110> found multiple times
L:2854 M:281 W: Numeric Fields not Ordered, <110> not ordered!.
L:2856 M:280 W: Numeric Identifier already exists, <120> found multiple times
L:2856 M:281 W: Numeric Fields not Ordered, <120> not ordered!.
L:2860 M:280 W: Numeric Identifier already exists, <130> found multiple times
L:2860 M:281 W: Numeric Fields not Ordered, <130> not ordered!.
L:2862 M:289 W: Identifier Missing or Out-Of-Order, <150> PRIOR APP FILING DATE
L:2863 M:281 W: Numeric Fields not Ordered, <151> not ordered!.
L:2865 M:281 W: Numeric Fields not Ordered, <150> not ordered!.
L:2867 M:259 W: Allowed number of lines exceeded, <150> PRIOR APPLICATION NUMBER:
L:2869 M:280 W: Numeric Identifier already exists, <110> found multiple times
```

VERIFICATION SUMMARY   DATE: 09/22/2003
PATENT APPLICATION: **US/10/656,394**   TIME: 13:54:46

Input Set : **A:\pto.pg.TXT**
Output Set: **N:\CRF4\09222003\J656394.raw**

```
L:2869 M:281 W: Numeric Fields not Ordered, <110> not ordered!.
L:2871 M:280 W: Numeric Identifier already exists, <120> found multiple times
L:2871 M:281 W: Numeric Fields not Ordered, <120> not ordered!.
L:2875 M:280 W: Numeric Identifier already exists, <130> found multiple times
L:2875 M:281 W: Numeric Fields not Ordered, <130> not ordered!.
L:2877 M:289 W: Identifier Missing or Out-Of-Order, <150> PRIOR APP FILING DATE
L:2878 M:281 W: Numeric Fields not Ordered, <151> not ordered!.
L:2882 M:259 W: Allowed number of lines exceeded, <150> PRIOR APPLICATION NUMBER:
L:2884 M:280 W: Numeric Identifier already exists, <110> found multiple times
L:2886 M:280 W: Numeric Identifier already exists, <120> found multiple times
L:2890 M:280 W: Numeric Identifier already exists, <130> found multiple times
L:2892 M:289 W: Identifier Missing or Out-Of-Order, <150> PRIOR APP FILING DATE
L:2897 M:259 W: Allowed number of lines exceeded, <150> PRIOR APPLICATION NUMBER:
L:2899 M:280 W: Numeric Identifier already exists, <110> found multiple times
L:2901 M:280 W: Numeric Identifier already exists, <120> found multiple times
L:2905 M:280 W: Numeric Identifier already exists, <130> found multiple times
L:2907 M:289 W: Identifier Missing or Out-Of-Order, <150> PRIOR APP FILING DATE
L:2912 M:259 W: Allowed number of lines exceeded, <150> PRIOR APPLICATION NUMBER:
L:2914 M:280 W: Numeric Identifier already exists, <110> found multiple times
L:2916 M:280 W: Numeric Identifier already exists, <120> found multiple times
L:2920 M:280 W: Numeric Identifier already exists, <130> found multiple times
L:2922 M:289 W: Identifier Missing or Out-Of-Order, <150> PRIOR APP FILING DATE
L:2927 M:259 W: Allowed number of lines exceeded, <150> PRIOR APPLICATION NUMBER:
L:2929 M:280 W: Numeric Identifier already exists, <110> found multiple times
L:2931 M:280 W: Numeric Identifier already exists, <120> found multiple times
L:2935 M:280 W: Numeric Identifier already exists, <130> found multiple times
L:2937 M:289 W: Identifier Missing or Out-Of-Order, <150> PRIOR APP FILING DATE
L:2942 M:259 W: Allowed number of lines exceeded, <150> PRIOR APPLICATION NUMBER:
L:2944 M:280 W: Numeric Identifier already exists, <110> found multiple times
L:2946 M:280 W: Numeric Identifier already exists, <120> found multiple times
L:2950 M:280 W: Numeric Identifier already exists, <130> found multiple times
L:2952 M:289 W: Identifier Missing or Out-Of-Order, <150> PRIOR APP FILING DATE
L:2957 M:259 W: Allowed number of lines exceeded, <150> PRIOR APPLICATION NUMBER:
L:2959 M:280 W: Numeric Identifier already exists, <110> found multiple times
L:2961 M:280 W: Numeric Identifier already exists, <120> found multiple times
L:2965 M:280 W: Numeric Identifier already exists, <130> found multiple times
L:2967 M:289 W: Identifier Missing or Out-Of-Order, <150> PRIOR APP FILING DATE
L:2971 M:282 E: Numeric Field Identifier Missing, <210> is required.
L:2971 M:282 E: Numeric Field Identifier Missing, <211> is required.
L:2971 M:282 E: Numeric Field Identifier Missing, <212> is required.
L:2971 M:282 E: Numeric Field Identifier Missing, <213> is required.
L:2971 M:200 E: Mandatory Header Field missing, <400> is required.
L:3877 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:14 after pos.:780
M:341 Repeated in SeqNo=14
L:3931 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:15 after pos.:1980
M:341 Repeated in SeqNo=15
```